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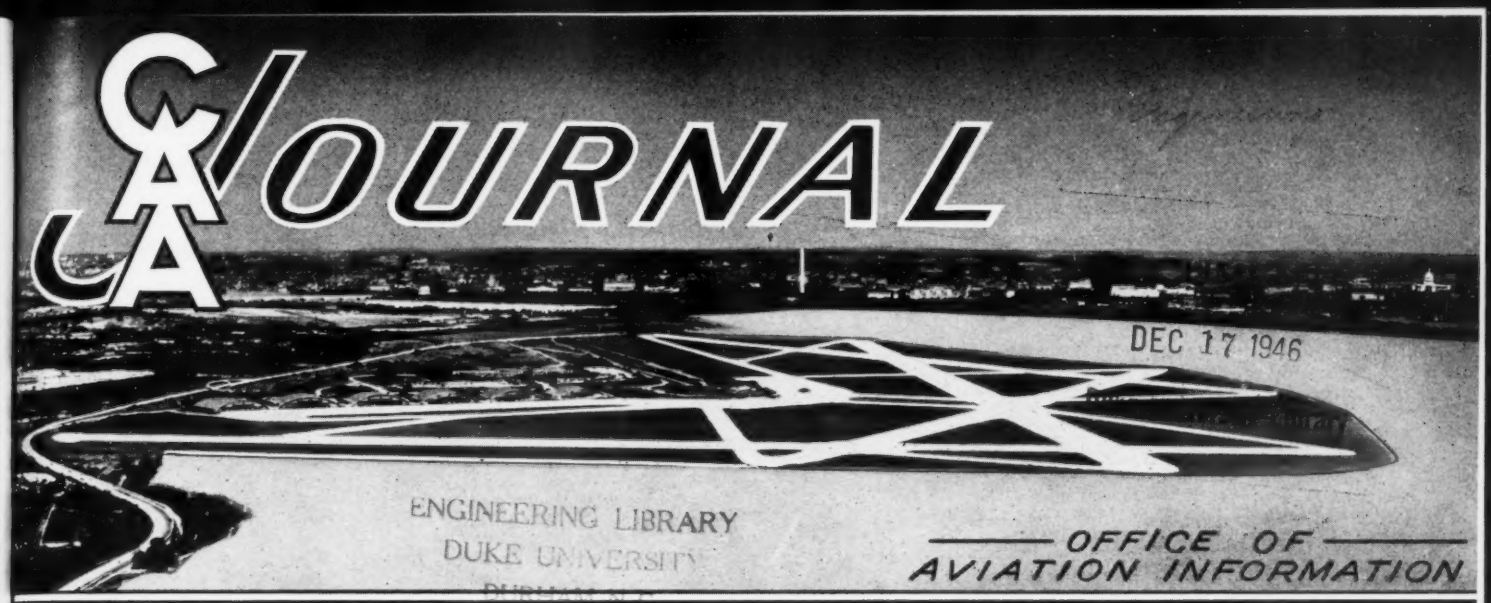

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OFFICE OF AVIATION INFORMATION

Safe, Easy Instrument Flying CAA Objective, Says Wright

The objective of the Civil Aeronautics Administration in its airways program is to make it possible, by electronic means, for the pilot under instrument conditions to fly with the same ease and safety that he has in contact weather, T. P. Wright, Administrator, declared in the principal address delivered at the annual dinner of the Institute of Aeronautical Sciences, October 24.

He cautioned, however, that over-optimism about "just over the horizon" developments in the electronics field can jeopardize the substantial progress the CAA has made in air navigation and instrument landing.

"Our policy," he said, "is to test and develop methods and systems that are presented and which seem to have promise, introducing them into the federal airways system only as they are proved technically sound, money is available, and equipment can be procured.

"Sound progress can only be attained by an evolutionary process—research; experimental development; service test and correction; production. To jump a stage or to pass to a succeeding stage without consolidating the position in an earlier one, usually spells disaster."

Congress Allots Funds—In discussing economy and safety factors, Mr. Wright said that only after we are reasonably sure of our ground can we go to Congress with recommendations for appropriations.

"Such funds involve millions of dollars for initial investment and as well more millions for subsequent operation and maintenance," he pointed out. "Under these circumstances, it readily can be seen that when the CAA selects a device for installation on a national basis or recommends one for international use, it must be one that will serve effectively as well as efficiently long enough to justify the tremendous costs involved.

"Congress, as is proper, scrutinizes our airways budget request very closely, and in fact because of mounting costs has directed us to prepare a comprehensive study including a possible system of charges which might be applied for the use of the airways. This makes it even more important that we develop our airways system so that the public, the ultimate users, will receive its money's worth.

Faced With Congested Airports—"Today we find ourselves with congested airports," he said, in reporting on present equipment. "Under present instrument conditions using low frequency equipment, our traffic controllers can bring in on one runway at most 10 aircraft an hour. If that airport does not have a parallel runway for use in take-off, this figure may be still further lowered. This is not enough. The ideal, of course, is to approximate good visibility conditions during instrument weather and bring in 60 planes an hour safely. This still is not enough as we view the certain increase of scheduled flying. This then is possibly the major problem today. It is the subject of hard and continuous study

(See page 142)

CAA Opens 44 District Offices In Airport Program

The Civil Aeronautics Administration has opened 44 new district offices for the administration of the Federal Airport Program. Forty-three of these are located within the limits of the country and one is in Puerto Rico. In addition, airport branches have been set up in the CAA regional offices in Honolulu, T. H., and Anchorage, Alaska.

Although some of the offices are located in temporary quarters until permanent office space can be arranged, all are in operation in anticipation of the flood of project requests for federal aid under the airport program. Project requests from states and communities are now being accepted for consideration by CAA district offices.

CAA's Office of Airports made a careful study of proposed district office sites before deciding on the locations. In some cases one office will serve as many as three states while at the same time states with large areas, such as Texas and California, have two offices in each. This was done to serve the most communities from a central point.

A list of the new district offices may be obtained from the CAA Office of Aviation Information, Department of Commerce, Washington 25, D. C.

CAB Asks Pilots For Their Views On Rule Changes

Pilots and the aviation industry are being asked for their comments on changes to Air Traffic Rules (Part 60) proposed by the Safety Bureau of the Civil Aeronautics Board.

A year's experience with the new Part 60, which was completely rewritten in August 1945, has shown where the rules need restating and expanding. Some of the revisions are needed also to make these rules and use of words conform to the international standards which PICAO has adopted to establish the same flight rules throughout the world.

From "Contact" to "Visual"—PICAO has adopted the term "visual", for instance, because the word "contact" cannot be translated into some foreign languages. It is also subject to misinterpretation. In the proposed version "visual flight rules" replaces the phrase "contact flight rules."

Gathered under the heading of "General Flight Rules" in the proposed draft are provisions which apply to both the "visual" and "instrument" flier. These include regulations having to do with careless or reckless operation; right-of-way; acrobatic flight; minimum safe altitudes; water operations; aircraft lights and distress signals.

Rules for Seaplanes—Use of seaplanes has increased, and water operation rules have been added to provide them with standard rules-of-the-road for avoiding other surface craft.

Acrobatic flight rules are expanded to prohibit acrobatics within civil airways, and also to require visibility of at least three miles.

The restated minimum altitude rule for flight over cities, towns and open-air assemblies, if adopted, will provide for safe clearance of buildings and other obstacles as well as sufficient height for safe emergency landing. The pilot will be required to fly at least 1000 feet above the highest obstacle within a 2000-foot radius from his aircraft. In many instances this will require pilots to move up above the ground considerably more than 1000 feet, the release notes.

Two ATC Areas—Under "Visual Flight Rules" the areas having air traffic control and, therefore, special rules, would be reduced to "control zones" and "control areas."

(See page 140)

Safety Biggest Board-Airline Job
CAB Chairman Landis Tells Clinic

Speaking on the job ahead for the Civil Aeronautics Board, James M. Landis, Chairman, told the National Aviation Clinic meeting at Oklahoma City that the biggest job of all must be done in the field of safety, for that aspect of commercial aviation most intimately affects the air traveler and his family.

Placing the major share of responsibility on the airlines for safe transport, he said that while the CAB and the CAA can set the standards and do their best to enforce them within the limits of their time and personnel, it is airline training, education, maintenance and supervision that, in the last analysis, will carry the traveler safely to his destination.

The best regulations and aids are set at naught in the light of the most common of all verdicts on accidents, that of pilot error, Mr. Landis said. Pilot and other personnel training procedures that become slipshod in maintenance "under the pressure of the public demand for air transportation can, in the end, have nothing but a boomerang effect upon our common future."

New Types of Service—In commenting on problems facing the Board in other fields, Mr. Landis said the most important new problems in certification revolve about the feeder airline, air forwarder and freight carrier cases, new types of service in which he indicated the Board must proceed somewhat cautiously in granting necessary operating rights.

In determining "feeder line" patterns "the Board must measure the requested route in terms of connecting trunkline operations and build an intelligent network that, at one and the same time, provides service to as many areas as possible but does not unbalance the economy of the air transportation picture," he said. "The Board also must have some regard to the economics of operation in the feeder services. The certification of 30,000 miles of route mileage to feeder applicants, which is a very small fraction of what is being requested, would at a very conservative estimate add about $20,000,000 a year exclusive of the cost of navigation aids and airports to the taxpayers' bill for aviation. And costs such as these are likely to continue for several years until the time comes, which we believe will come, when a new form of transportation, shall have become accepted as part of the fabric of our national life.

Planes Have Changed—"The multitude of applications by certificated carriers present new problems, not simply a recurrence of the old," Mr. Landis said, pointing out that the newer types of equipment call for new thinking.

"Non-stopping from coast to coast makes it useless to think merely in traditional route patterns," he said. "The adaptability of long-range craft to local service might suggest more division of responsibility between these operations save for the fact that the intermediate point frequently has equal claims to direct long-distance connections as the terminal point.

"When, if ever, a halt to these extensions will take place, is difficult to see. The fluctuations of the industry make stabilization of the present route patterns an idle hope. But a prerequisite for extensions should be the demonstrated ability of the carrier to serve competently and faithfully the pattern that already is his responsibility. The public that is to be served is all the public and not merely those groups that it is most easy and most profitable to serve."

Board's Problem Child—Terming the future regulation of nonscheduled carriers one of the most urgent but troublesome problems before the Board, Mr. Landis said the Board's legal authority to throw the door wide open was in doubt. This action also poses the practical problem of avoiding serious financial injury to the certificated carriers upon which the public is dependent for vital services.

"Many of the noncertificated carriers who clamor for unrestricted opportunity to serve what they see as an important public need are actually demanding the privileges of air transportation without offering to assume the obligations to the public which should appropriately accompany those privileges," he said. "Thus many of them seek to skim the cream of peak traffic potentials which may exist between points for limited periods of time while avoiding the burden of providing a service upon which the public can rely between those same points when the travel market appears less lucrative or between other points when travel is necessary but not profitable. In considering what extra services may be needed or desirable, it is important to keep in mind the fundamental concept of the Act that sound economic conditions in air transportation are necessary to the development of a permanent system serving the year-round needs of our commerce, our postal system, and our national defense. These considerations must be accompanied also by the consideration of the element of safety and the close relation which sound economic conditions bear to the observance of high standards of safety."

Partial Regulation—Thus far the Board has chosen to alter the outstanding regulation to fit today's needs, Mr. Landis said. Its proposed revision would continue the existing exemption for nonscheduled operations in interstate transportation and also to some extent between the United States and its territories and other countries. It would provide some limitation on the volume of unlicensed operations, and also proposes the classification of carriers according to the size of the aircraft used, with the idea of subjecting the smaller carriers to a lighter burden of administrative regulation.

Idaho Feeder Carrier First Of New Lines to Start Service

Empire Airlines, first of the seven newly certificated feeder lines to begin service, made its first mail and passenger trip over its 695-mile Idaho Falls-Spokane route September 28.

The carrier is conducting two round trips a day with stops at 12 of the 15 points in Idaho, Oregon, and Washington authorized by the Civil Aeronautics Board in its West Coast feeder line decision in May.

The six points on Empire's route which are now receiving their first air carrier service are Gooding, Lewiston-Clarkston and Coeur d'Alene, Idaho; and Ontario, Baker and La Grande, Ore.

The other six cities, already on trunkline routes, are Idaho Falls, Pocatello, and Boise, Idaho; Pendleton, Ore.; and Walla Walla and Spokane, Wash.

Service to Burley, Twin Falls and Pullman-Moscow, Idaho, has been deferred until adequate airports are provided at these places.

Monarch Air Lines (formerly Ray Wilson, Inc.) is making progress in shaping up its equipment and operating plans for feeder service in the Rocky Mountain area. Monarch's fleet will consist of five converted C-47's, each of which will provide seating for 15 passengers. Service over the Denver-Durango segment was scheduled to start November 4, with two of the planes in use. Cities on this segment are Denver, Colorado Springs, Pueblo, Canon City, Alamosa and Durango, Colo.

West Coast Airlines has filed notice of intention to start service between Seattle and Portland, and Southwest Airways plans to start service soon between San Francisco and Los Angeles.

Vol. 7 November 15, 1946 No. 11

CAA JOURNAL

Department of Commerce
W. Averell Harriman, *Secretary*

Civil Aeronautics Administration
T. P. Wright, *Administrator*

Issued on the 15th of each month. Subscription $0.50 a year in the U. S. and Canada. Foreign countries, $0.75. Sold by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Approved by the Bureau of the Budget.

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CAA Answers

Q—I have recently been released from the Army and would like to know what I must do to bring my private pilot certificate, issued Jan. 1, 1943, up to date.

A—Your present certificate will be valid until at least July 1, 1947, and may be exchanged at any time before that date for a certificate under the new rating system in Part 20. This applies to any private or commercial certificate issued on or after Jan. 1, 1942, and is a special measure for the benefit of those in service. After July 1, 1947, you must get your pilot's certificate renewed every two years.

However, to actually fly the plane you must have passed a physical examination within the past 24 months. The physical examination has nothing to do with the expiration date of the pilot certificate. If your medical certificate is not current, you are automatically grounded until you have been reexamined.

An Army physical examination will be satisfactory evidence of physical qualification in lieu of a class 2 medical certificate required by CAR 43.402. In this case, you must have a certificate signed by a flight surgeon on active duty with the military forces, stating simply that he has examined you and found that you meet the military physical requirements for solo flying duty, and giving the examination date.

Obstructions at 26 Big Airports Charted by Coast and Geodetic

The Coast and Geodetic Survey has charted the obstructions at 26 airports, the first to be completed in a series of 583 Airport Obstruction Plans which will cover all major airports in the United States.

The Obstruction Plans show the runways and those obstructions which are above a 40 to 1 glide angle and within a three-mile radius of the end of the runway. The highest point of the usable landing area is shown for each airport.

The plans, ranging in size up to 30 by 40 inches, are distributed by the Washington office of Coast and Geodetic Survey at 40 cents each. A list of the plans now available will be furnished upon request.

Foreign Air Mail Rates Lower

Lower air mail rates to foreign countries went into effect November 1. Rates to South American countries are now 10 cents one-half ounce; Europe, 15 cents; North Africa, 15 and 25 cents; Africa, Asia, East Indies and South Pacific areas, 25 cents.

Transatlantic Fliers Get "Wind" Reports From CAA Station

Starting October 15 weather information broadcasts were initiated over the Civil Aeronautics Administration station WSY, New York, to enable transatlantic pilots to take advantage of the new technique in long range navigation known as "pressure pattern flying."

Shortest Flight-time Path—This new technique consists of determining the shortest flight-time path to the destination by a series of late accurate reports from other pilots flying the route and allows flights to take full advantage of the most favorable winds resulting from an airflow around a pressure area.

Initially, the broadcasts are being made at 25 minutes past each even hour (Greenwich Civil Time) on 3380 kc, covering a service radius of from 500 to 800 miles over the flying routes to Europe. The CAA is at present making a study to determine if additional frequencies can be employed to give coverage by WSY over the entire North Atlantic routes. However, it would be more desirable to have broadcasts made from both sides of the Atlantic and efforts will be made to arrange for a similar service from some point in Europe.

Pilots Report on Winds—The plans call for pilots to add the observed wind direction and pressure on the end of their routine in-flight position messages. This information is then compiled and edited by Weather Bureau personnel for the broadcast.

The request for the WSY broadcasts for pressure pattern flying was made to the CAA by the meteorological committee of the Air Transport Association through the U. S. Weather Bureau.

The principle of this type of flying is not entirely new as the Army and Navy Air Forces experimented with it, as did several of the scheduled airlines. The new broadcast over WSY, however, marked the first time that weather information from other aircraft has been collected and rebroadcast for that purpose.

Pressure pattern flying is considered advisable only for long overseas or for transcontinental flights. Through its use, aircraft flying off the regular course, if necessary, can take advantage of the tail-winds or in the reverse, avoid head-winds and save considerable time in the over-all flight, even though an additional distance may be travelled.

Land Acquisition Section Is Added to Federal Airport Act

Proposed regulations governing the Federal Airport Act, which were published in the *Federal Register* September 7, have been amended by adding a new section titled "Land Acquisition." The new section reads as follows:

S. 550.0291. Land Acquisition—The acquisition of land or of any interest therein or easement through or other interest in air space shall be eligible for inclusion in a project only if such acquisition is necessary: (a) to permit the accomplishment of other airport development, whether such development is to be accomplished as part of the Federal-aid Airport Program or not; (b) to prevent or limit the establishment of airport hazards; or (c) to permit proper use, operation, management, and maintenance of the airport as a public facility. The term "acquisition of land" as used in this section shall include the acquisition of land already developed as an airport and of all structures, fixtures, improvements, and equipment thereon of a type the construction, installation, or purchase of which would be eligible for inclusion in a construction project pursuant to the regulations of this part.

T. P. Wright Awarded Medal of Merit

The Medal of Merit, highest Presidential award given civilians through the military services, has been presented to T. P. Wright, Administrator of Civil Aeronautics, for exceptionally meritorious conduct in the performance of outstanding services to the United Nations since June 1940. Secretary of War Robert P. Patterson (left, above) made the presentation September 19, to Mr. Wright (right, above).

"From June 1940 to September 1944," the citation reads, "Mr. Wright was responsible for increasing the output of all plants manufacturing aircraft. On the basis of his broad experience and knowledge of the airplane industry, he advised the President that this country was capable of producing 100,000 planes a year. When that goal was announced, he tenaciously set about to realize it, and the goal was not only reached, but exceeded. One of his great contributions was integration of the work of governmental agencies and the aircraft industry as a whole. His sound judgment in making decisions regarding the operations and planning of aircraft industrial work, his great technical knowledge and ingenuity, astuteness, deep sense of public service, and devotion to duty, were all utilized to make the value of his services inestimable."

CAA Approves New Plane Model For Pickup and Passenger Use

A new model plane, Beech DI8C-T, is the first plane equipped for both pickup and passenger operations which has been issued a type certificate by the Civil Aeronautics Administration.

Another feature of the low-powered plane is its transport rating. It is the first model in the 1000-horsepower class to be approved under the new transport category requirements.

A 10-place model, the plane has two Continental R9-A engines rated at 525 hp for take-off and 500 hp for other operations. Maximum landing and take-off weight is 9000 lbs.

Designed principally for feeder line service, the plane is also suitable for executive transport.

TWA Transatlantic Mail Rate

The CAB has fixed a temporary mail rate for Trancontinental & Western Air on its North Atlantic route at 75 cents per United States mail ton-mile. The rate proceeding will remain open until adequate experience and operating data have been accumulated to provide a sound and reliable basis for determination of a final rate. The final rate will be retroactive to Feb. 5, 1946, the date TWA began transatlantic mail service, and the effective date of the temporary rate fixed by the Board.

Uncle Sam's Students Return to the U. S. To Buy Airplanes

Carlos Bellocq, of Buenos Aires, and Jose Felismo de Oliveira of Rio de Janeiro, pilot and mechanic graduates respectively of the CAA Inter-American Training Program, now are in this country, Bellocq seeking new planes for his private field and a dealership for U.S.-made aircraft, and de Oliveira to buy more transport planes to handle the heavy traffic on the airline for which he works.

Meanwhile, an air traffic control graduate, Mario W. Facio S., writes from San Jose, Costa Rica, that he is making headway in introducing U.S. air regulations and traffic tower rules at the field where he went to work the day after his return from the U.S.

Has Own School—Bellocq was trained as a pilot and instructor at Randolph and Kelly Fields in 1941 and 1942 under CAA auspices. He joined the Direccion de Aeronautica Argentina, the CAA of that country, on his return, and worked there as an inspector until 1943 when he set up his own school and fixed base operations at San Fernando Airport. Today, he has about 30 students whom he trains in U.S.-made planes, and a thriving charter business in which he uses a British-made airplane. His firm assembled a number of light training planes recently which had been made in this country and fitted with British-made engines. His principal interest now is to obtain planes for use in training and for sale to his graduates.

Inspector for Brazilian Line—de Oliveira, who received his CAA aviation mechanic training at Tulsa, Okla., and in six months of work as a mechanic with Chicago and Southern Airlines, is employed by the Viacao Aerea Brasil, S.A., as an inspector. He has been sent here to buy surplus transport planes to add to the airline's fleet operating out of Rio. His former instructors and acquaintances are helping him in his search for transports and extra engines, and advising him on the purchase of new models when they are available.

Air Rules Follow CAA Pattern—Facio went to work the day after he reached his home in Costa Rica and in a short time was engaged in writing the rules of the air and airport tower procedure, based on the Civil Air Regulations and traffic control procedures of this country which had been a part of his training course here. His present problem is a unification of procedures in the traffic tower at the San Jose Field, where 84 planes, military, airline and private, land daily.

Almost daily, evidences come to the CAA Office of the International Activities Service of increasing civil aviation activity in the other American Republics, where such promising young men as Bellocq, de Oliveira and Facio are putting into practice the things they learned in the U.S.

Surplus CPT Bulletins May Have Market

Paper shortage has prevented reprinting of the Civil Aeronautics Administration bulletins which were used as textbooks during the Civilian Pilot Training Program. Now, with the increasing amount of aviation training of returned soldiers, these bulletins are in demand again. It is possible that former CPT contractors may have some of these texts stored away, and that a market exists for these used books. The Office of Aviation Information will be happy to put prospective purchasers in touch with the owners if the latter will describe in a letter to the CAA what booklets they have on hand.

New Air Coordinating Committee Established By Presidential Order to Advise on Top Policy

The Air Coordinating Committee, recently established by the President to succeed a committee which previously existed under the same name, announced the appointment of John Sherman as executive secretary and Myron A. Tracy as assistant executive secretary.

Mr. Sherman was formerly assistant director (international) of the Economic Bureau of the Civil Aeronautics Board, and Mr. Tracy has been associated with the original Air Coordinating Committee for the past year as working secretary.

The Air Coordinating Committee is composed of representatives of the State, War, Post Office, Navy and Commerce Departments, the Civil Aeronautics Board and, on a non-voting basis, the Bureau of the Budget.

Concurrent with his Executive Order setting up the new Air Coordinating Committee, the President named Will Clayton, Under Secretary of State for Economic Affairs, as chairman, and James M. Landis, Chairman of the Civil Aeronautics Board, as co-chairman. William A. M. Burden, Assistant Secretary of Commerce, serves as vice-chairman.

To Advise the President—Mr. Clayton and Mr. Landis point out that the President's Order gives the committee broad responsibility in civil aviation, and that the President expects the committee to advise him on civil aviation policy matters. Of the major problems which are now before the committee, Mr. Clayton and Mr. Landis emphasized the importance of the following: Early action in the Provisional International Civil Aviation Organization to arrange for the installation of essential air navigation facilities along international airways; the facilitation of air travel through the liberalization of customs, immigration, quarantine and passport requirements; the coordination of government policy with respect to the installation of electronic aids to air navigation along the federal airways system.

Industry Panel—The committee also announced the establishment of an aviation industry advisory panel which will consult with the Air Coordinating Committee on problems in which the government and industry are jointly interested. As an initial step in the organization of the panel, invitations have been extended to the following organizations to become members: Institute of Aeronautical Sciences, Aircraft Industries Association, Air Transport Association, CIO, AF of L, and the National Aeronautic Association. The committee plans later to invite a representative of education, a representative of non-scheduled flying and other representatives of aviation to become members of the panel.

The new committee has set up industrial, economic, and technical divisions under the administrative direction of staff secretaries to assist the subcommittees to perform their functions. Under the technical division initially will be the following subcommittees:

Aids to Air Navigation and Landing—including visual and electronic aids to air navigation and landing, demonstration of radio aids and communications. *Aviation Meteorology*—coordination of government aviation meteorology. *Airspace*—coordination of domestic flight activities. *Air Safety*—including airworthiness, personnel licensing, operating standards, accident investigation, air traffic control (except coordination of domestic flight activities), search and rescue, and airport standards. *Aeronautical Charts*—coordination of technical standards of areonautical charts.

The Economic Division will initially comprise the following subcommittees:

Facilitation of International Civil Aviation—including matters relating to customs, public health regulations, travel documents and monetary and tax questions. *Area Aviation Policy*—economic and political aspects of U. S. aviation policy in various world areas; coordination of matters relating to U. S. Foreign air bases and rights. *Financing Air Services*—including U. S. and international financing of aviation facilities and installations. *Aviation Information and Statistics*—including central aeronautical indexing and coordination of statistical work.

The Industrial Division will supervise, initially, the following two subcommittees:

Aircraft Production—including matters relating to military and civil aircraft production, supply and maintenance; mobilization of the aircraft industry. *Aviation Research*—matters relating to civil and military aviation research and development in consultation with the National Advisory Committee for Aeronautics.

A "PICAO Panel" is provided to review and coordinate the important share of the committee's work which affects the Provisional International Civic Aviation Organization.

Weather Bureau Plans Broadcasts For Pilot Needs

More complete weather service to the private pilot is the object of an experiment the Weather Bureau is planning to conduct over commercial broadcast stations and networks in the Middle West and Rocky Mountain Areas in the near future.

Anticipating that increases in private flying will bring natural demand for more weather information, Dr. F. W. Reichelderfer, Chief of the Weather Bureau, has announced that the needs of aviation will be given special consideration in the planning of weather broadcasts made by Weather Bureau personnel in five major cities.

Already more than one hundred standard broadcast stations are carrying regularly scheduled programs broadcast from microphones installed in Weather Bureau offices, and results of the new experiment will determine future Weather Bureau policy regarding this program.

Five Radio Stations—The test will be made first from radio stations in Madison, Wis.; Chicago, Ill.; Wichita, Kans.; Fort Worth, Tex.; and Salt Lake City, Utah. The information will be provided from Weather Bureau forecast offices, city offices, and airport stations. The area tested will include both urban and rural sections located in the plains and in the mountains. It should provide a comprehensive test of this method of weather dissemination. It will supplement the weather information now broadcast over the range stations of the CAA federal airways, which have resumed all of the weather services that were interrupted during the war. Names of the stations, wave lengths, and time of broadcasts will be announced later.

A schedule of weather broadcasts made by Weather Bureau personnel from microphones installed in Weather Bureau offices has been printed and may be obtained by writing to the Chief, U. S. Weather Bureau in Washington, D. C.

The Weather Bureau believes that the demand for weather information, supplementing that broadcast by the Civil Aeronautics Administration along the federal airways, will reach such proportions soon that special weather broadcasting stations may be required.

CAB Seeks Comment On Proposed Rules

(Continued from page 137)

The term "control zone" which replaces "airport traffic zones" in the proposed rules, will normally be limited to a 3- or 5-mile radius around an airport, the Board explains. The control areas will normally be the Civil Airways as they are now. The term "airport approach zone" is dropped.

Ground and Flight Visibility—A practical approach to visibility rules within control zones is presented. Ground visibility, to be determined by an accredited observer at airport within a control zone, would govern take-off, landing, and entering the traffic pattern. When visibility is less than three miles the pilot would have to be cleared by air traffic control for these maneuvers. This rule would apply only to take-off at airports without traffic control but with an accredited observer on duty.

Flight visibility, to be gaged by the pilot, would govern other operations in the control zone, such as flights through the zone which avoided or passed over the traffic pattern. A three-mile visibility, with proper cloud clearance, would permit an aircraft to proceed above an overcast or local haze condition without clearance from air traffic control in the zone.

The visibility and proximity-to-cloud distances written into the proposed version follow the present requirements closely.

See and Be Seen Rule—However, the Board is seeking comment on an alternate proposal—a simpler "see and be seen" rule—designed to replace the complicated proximity-to-cloud and visibility provisions under the Visual Flight Rules section (60.2).

This rule would apply inside as well as outside of control zones and control areas, and place upon the pilot the responsibility, according to the speed of his aircraft, to keep far enough from the clouds to enable him to see other aircraft in time to prevent collision.

The alternate proposal reads:

"Unless otherwise authorized by air traffic control, aircraft shall be operated in accordance with the following rules when flight visibility is one mile or more:

"(a) *Proximity to clouds.*—Aircraft shall be operated at a sufficient distance from any cloud or cloud formation to permit the pilot of the aircraft to see other air traffic in time to avoid any hazard of collision.

"(b) *Visibility.*—Under conditions of restricted flight visibility, aircraft shall be operated at a speed which will give the pilot of such aircraft adequate opportunity to avoid any hazard of collision with other air traffic.

"(c) *Cruising altitudes.*—At any altitude of 2,000 feet or more above the surface, all aircraft shall be flown at a cruising altitude appropriate to its magnetic heading as follows:

0°–89° inclusive, at odd thousands (3,000; 5,000, etc.),

90°–179° inclusive, at odd thousands plus 500 (3,500; 5,500, etc.),

180°–269° inclusive, at even thousands (2,000; 4,000, etc.),

270°–359° inclusive, at even thousands plus 500 (2,500; 4,500, etc.)."

This is being suggested as a possible solution to the difficulty of specifying safe limitations for the broad range of aircraft speeds we have in prospect. An airplane which cruises at 75 mph can be operated with reasonable safety in reduced visibility conditions, while a plane flying at 450 mph would require six times as much visibility.

A further item on which the Safety Bureau is canvassing pilot preference concerns the use of a "magnetic course" in place of the present "magnetic heading" for determining cruising altitudes outside of control areas and control zones.

Mid-Continent Control By American Airlines Is Denied by Board

Merger of American Airlines, coast-to-coast carrier, and Mid-Continent Airlines, north-south carrier, has been denied by the Civil Aeronautics Board on the basis that the two systems do not complement each other, and that the combination would not help create an ordered over-all air transportation pattern.

Mid-Continent sought to merge with another carrier, after seven of its nine aircraft were requisitioned in May 1942, forcing suspension of service on route 26 from Minot to Huron and on all of route 48.

Final outcome was an agreement between American and Mid-Continent's majority stockholders in 1945. American proposed an exchange of at least a majority portion of Mid-Continent's stock with the expressed intention of absorbing Mid-Continent into the American Airlines system, or integrating the services, operations, facilities and personnel of the smaller carrier.

Small Traffic Exchange—In discussing the disadvantages of the merger, the Board pointed out that the exchange of traffic between the carriers has been comparatively slight, although Mid-Continent has operated extensively as a connecting carrier. In exchange of passengers and derived revenues, American ranked sixth among the carriers making connections with Mid-Continent during representative periods.

The fusion of the two systems would create through services to only eight of the eighty points of traffic interest to Mid-Continent cities. Furthermore, the one-carrier service to these relatively unimportant new channels would be less direct than service already offered by other carriers. As an example, the proposed new system would offer an Omaha-Los Angeles and Des Moines-Los Angeles service 250 miles longer than existing United and Western routes, and would create a 15 percent longer operation on routes from Shreveport to Dallas and Fort Worth than the single-carrier service offered by Delta Air Lines.

The merger, the Board intimated, might inflict losses in traffic and revenue upon competing carriers, more through the greater competitive advantage gained than through greater public benefit.

Size Isn't Factor—The Board said, however, that it did not mean to imply that American was too big, or that it was closing the door to further expansion or development of the American system.

"We make no attempt to calculate an optimum size for an air carrier, nor do we express a belief that such a fixed and invariable standard exists in so dynamic a field as air transportation," the opinion stated. "We do not intend, either, to leave the impression . . . that we should strive toward an ultimate goal of parity among air carriers. In air transportation, as in any other path of life, it has not been ordained that all shall be of equal stature or fortune. These factors of size and competition are relative matters, intimately tied to the circumstances of any particular case."

Shows Big Improvement—In answer to American's contention that the merger would result in reduced costs and fares, and lower mail rates, the Board pointed out that Mid-Continent is financially able to obtain newer and additional flying equipment and will probably be able to reduce fares in time, as a result of better performance standards. The Board also expressed belief that with a return to normal operating conditions, the carrier can achieve the stability required as a basis for lower air mail rates. The latest net revenues show that Mid-Continent multiplied its net revenues about 74 times—from $2,140 during a five-month period ending May 31, 1945, to $158,004 for an equivalent period in 1946.

Five "Nonscheduled" Carriers Asked to Show Cause

Five carriers operating without certificates have been asked to prove their "nonscheduled" status. The Board orders said the carriers appeared to be conducting scheduled operations, for which they must have a certificate of convenience and necessity, and requested them to "show cause" why the Board should not order them to cease operation, in violation of the Act.

The carriers issued the show cause orders are Trans-Luxury Airlines, Inc.; American Air Export and Import Company; Texas Air Lines, Inc.; Trans-Caribbean Air Cargo Lines; and Caribe Airways, Inc. Each proceeding will be assigned a public hearing before a Board examiner.

Board Consolidates Coast-to-Coast Routes Of Three Airlines

Recent route consolidations approved by the Board enable American and TWA to connect Boston, New York and Washington with Los Angeles in single route service. Similar service also connects the same cities with San Francisco on routes flown by United Air Lines and TWA, and Pennsylvania-Central may now fly nonstop between Chicago and Washington.

American Airlines' routes 4, 18 and 23 are consolidated into one route now designated as route 4; TWA's routes 2, 36, 37, 61 and 67 become route 2; United Airlines' routes 1, 62 and 66 become route 1; and Pennsylvania-Central Airlines' routes 14 and 32 become route 14.

Allows Nonstop Schedules—In the consolidations former route junction points become intermediate points on a single route, allowing the carriers greater range in scheduling nonstop and skipstop service.

Certain restrictions, however, apply to these carriers. TWA may not schedule nonstop service between Chicago and Washington or between Chicago and Boston except on flights originating or terminating at Kansas City or points west. United may not schedule nonstop services between Chicago and Boston or between Chicago and Washington except on flights originating or terminating at Omaha or points west of that city. PCA is restricted from nonstopping between Chicago and Cleveland, Chicago and Akron, Chicago and Youngstown, and Chicago and Pittsburgh, except where such flights originate or terminate at Washington and Norfolk.

Stops Take Longer—With four-engine equipment, the omission of an intermediate stop assumes considerably greater significance than with presently used two-engine equipment, the Board said. Each stop at a route junction point with DC-4 aircraft takes approximately 15 minutes maneuvering time, including slowing down of over-all speed due to the necessity of making a landing, and 20 minutes station time—a total of about 35 minutes. This is the time required for 135 miles of flight at the DC-4's 230 miles per hour cruising speed. Such a stop with DC-3, two-engine equipment, requires in the neighborhood of 20 minutes total time.

Pennsylvania-Central, whose route now terminates at Chicago, was the first airline to inaugurate four-engine service between Washington and Chicago, and statistics indicate that between February 1945 and October 1945, passengers increased from 885 to 2,300.

U. S. and Argentina Temporarily Suspend Air Transport Talks

The United States and the Argentine delegations have suspended, for the time being, negotiations for an air transport agreement between the two governments, the Civil Aeronautics Board announced.

The Argentines insisted upon the division of air traffic between the two countries according to a prescribed formula and also on limiting the frequency of schedules and the capacity of services to be offered. The United States upheld the view that international air traffic should be governed by free and fair competition between the national airlines of the respective governments, subject to the safeguards which are a part of the bilateral agreements the United States has concluded with many other countries.

Present Services Continue—Suspension of these conferences is temporary and does not affect the air services now being provided by Pan American and Panagra. At the close of the conferences, it was pointed out to the Argentine delegates that despite the absence of an air transport agreement, the Civil Aeronautics Act provides a means for the inauguration of new services to the United States by a properly designated Argentine carrier upon principles of reciprocity of treatment.

It is believed that the Argentine carrier, FAMA, will file an application for such a permit. Similarly, an application will be filed for the United States carrier, Braniff Airways, with the Argentine authorities, for permission, pending further developments, to fly the route certificated to it in the recent Latin American decision by the Civil Aeronautics Board with the approval of the President of the United States. No present changes, other than improved services, are contemplated in the routes now being flown by Pan American and Panagra.

Board's New Safety Director Former Eastern Airline Pilot

The new Director of the Board's Safety Bureau, Colonel Wallace S. Dawson, has had 22 years of aviation experience, 11 of these spent as an Eastern Air Lines pilot. He succeeds Colonel Joseph B. Duckworth, who resigned from the Board to accept a permanent commission in the U. S. Army Air Forces.

Colonel Dawson

Colonel Dawson enlisted in the U. S. Army in 1924 as a flying cadet, and was graduated in 1925 as second lieutenant in the reserves. He entered the regular Army in 1926 and resigned his commission in 1928 to become aeronautical inspector in the Aeronautics Branch, Department of Commerce. In 1929 he took the position of manager of the Kansas City base of Curtiss Wright Flying Service, and in April 1931 he went with Eastern Air Lines as a pilot, where he remained until February 1942 when he returned to active duty in the Army Air Forces. During his service, he was base commander of B-17 training base at Sioux City, Ia., and wing commander of the 21st Bombardment Wing, Director of Training, Second Air Force. He received the Legion of Merit for outstanding service while wing commander.

Wright Describes Present and Future Airway Aids Designed for Safer Flying in Bad Weather

(Continued from page 137)

and development by the CAA and others. Many solutions are suggested, some practical and some fantastic. It is our task to select and apply the best because ours also is the responsibility to see that there is no waste of funds.

"Air traffic control affects airport design and size and cost. In times of congestion under instrument conditions, there are *today*, actually, only a few apparent solutions. We might restrict our major airports to scheduled air transport. That in turn might imply that the scheduled carriers ought to consider owning their own, exclusive fields. We might designate several airports properly separated at big cities and assign incoming planes to spread the traffic. That would mean each airline would have to maintain service crews for planes and facilities for passengers at several terminals, an expensive procedure. Or, we might build our airports so big that we could use a comprehensive system of parallel or tangential runways. Still another solution would be the design of aircraft with landing and take-off characteristics so much improved that it would affect our whole traffic-handling problem. The problems are difficult and possibilities of corrective measures many, but continued development and painstaking study will discover the proper solutions.

New Device Ready—"But one important device which will help answer the demand for a system of landing by instruments in bad weather is now ready for use at many locations—the CAA instrument landing system. It has had wide acceptance in principle and will get substantial use in scheduled air transport this winter. The PICAO standards committee in its recommendations for standards and practices issued last November recommended the adoption of the SCS–51, 'or similar type of instrument landing system.' (The SCS–51 developed during the war is the portable version of the CAA system.)

"The CAA instrument landing system is no suddenly developed device. As far back as 1928 when aeronautical radio as a whole was relatively undeveloped, a series of studies was undertaken in the Department of Commerce by its Aeronautics Branch and the Bureau of Standards. As a result, a three-element system was originated which consisted of localizer radio beams thrown out in a vertical plane down the central line of the runway; a glide path plane at about two and one-half degrees to the horizontal which gives the pilot the correct angle of descent and which intersects the localizer to form a proper pathway in the air; and marker beacons which by flashing lights on an instrument panel in front of the pilot show the distances from the 'touch down' point. The process of flying the system is simplified for the pilot by the use of an instrument consisting of two pointer needles actuated by signals from the localizer and glide path beams showing him his relation to the 'on course' path. Supplementary aids associated with it are automatic direction finder stations and approach light lanes, the former as an aid in accuracy of flying approach procedures, and the latter as a means for assuring early visual contact with the ground.

52 Installations—"We expect to have approximately 52 of these instrument landing systems in operation by the first of the year, and the airlines are proceeding with their training of pilots and equipping of planes to use this aid to bad weather landing. The CAA is confident that this system will contribute substantially to safe handling of planes in instrument conditions and that, when the pilot's skill and technique have been developed, will make it possible in bad weather to land in the order of 30 planes per hour. In its final form, it is contemplated that the system will be hooked up with the auto pilot, further increasing its effectiveness, thus making automatic instrument approach, and possibly eventually instrument landing, possible.

"In addition to the instrument landing systems installed at civil airports, there are about 27 military installations which will be available for use by any pilot in an emergency. Thus, the airways will have more than 75 instrument landing systems available for use by the first of the year.

"The airlines planned to have all of the scheduled transport planes equipped with instruments necessary to utilize this bad weather flying aid by the first of the year. We understand that practically all airline planes are already equipped with localizer and marker beacon receivers; and that most are equipped with racks for the glide path receiver and with glide path receiver antennas.

"Thus all that remains to complete the installation of the airborne instrument landing equipment is the placing of the glide path receivers in their racks in the planes and connecting them to the instrument panel. It is my information that this equipment will be installed in most cases no later than January 1, so that the operation of the instrument landing system for use at points equipped as mentioned above will be an accomplished fact at that time. Then we will have made possible a very substantial speeding up of the landing frequency on instruments.

3-Minute Intervals—"The Radio Technical Commission for Aeronautics recently conducted tests at New York using the localizer, marker beacons and compass locator stations only. As a result of these tests we are confident that we can bring in a plane safely every three or four minutes. This timing will be further improved possibly to two or three minute intervals when using the glide path in addition.

"We are interested also, though possibly to a lesser extent, in lowering the ceilings for scheduled airline operation and thus improving frequency of schedules 'made good.' A reduction of ceiling minimums from 500 to 200 feet (with commensurate reduction in visibility requirements) with equal safety is our first objective. This will contribute materially to schedule regularity as the number of unflyable days per year at most airports will be reduced from 6 or 7 percent to 1 or 2 percent thereby.

"We are going ahead on radar as rapidly as money, personnel and equipment are available. The Army has agreed to lend us three of the very newest GCA (ground controlled approach) radar systems, which we will install and operate at LaGuardia, Washington National and Chicago airports. The war-developed GCA required five or more operators with commensurately large operating cost if the system were to be generally applied to our civil airways. The manufacturer of the latest type hopes to reduce requirements of operating personnel enough to make wider application practicable. The CAA, however, would not be justified at present in proceeding more rapidly than the above program indicates until further service test this winter points more positively to the next appropriate step. It appreciates fully the advantages of GCA as a supplemental aid.

Tomorrow's Airways—"More interesting possibly is what our airways will be tomorrow," Mr. Wright said.

"Of very great importance is the transition now under way from the low frequencies of our present range system to very high frequency. Started early in the war, here again installation was interrupted. We are going forward now with the equipping of nine complete airways with four-course aural-visual ranges in the 112–118 mc band. One has been in successful use since early last spring and others are approaching completion. Chief advantage of these ranges is that they are substantially static free, thus they are available when most needed.

Exhibition Flying Banned For CAA Inspectors

CAA inspectors are prohibited from engaging in exhibition stunt flights or air races, either in personal or CAA planes. This policy, outlined in Safety Regulation Instruction No. 262, will govern inspector personnel within the United States proper, overseas possessions, or in foreign countries, and is effective while on leave or in a duty status. The instruction enlarges on a previous order prohibiting CAA employees from engaging in any phase of commercial aviation, except as required in the exercise of the employee's duties.

"The development illustrates very well one of our problems, which will be very understandable to anyone engaged in development work. Right in the midst of our changeover program (LF to VHF), our engineers found an improvement. They had reached the point in their development of the omni-directional range principle where the durability and practicability of its use instead of the four-course, aural-visual was indicated. This turned out well, however, because the change from one to the other proved to be relatively simple and inexpensive. As a result, all these VHF ranges will be omni-directional when the nation-wide system is completed.

Long Range System—"These VHF omni-ranges are for short distance use usually over the land. For long, over-water hops, a high-powered low frequency omni-directional range has been developed. It will also serve over desert and jungle areas, where it is not possible to build the many VHF range sites required (one each 100 miles). War developed Loran is the current standard for long range over-water operations.

"Also over the continental United States, we will have a long range system. This will be for use by airplanes making long flights, usually on great circle courses, and at high altitudes. It will consist of 15 omni-directional ranges, operating on low frequency and using about 40 kilowatt power. These 15, to be used as is any omni-directional range, will cover the U.S., parts of Canada and Mexico and large coastal areas of both oceans by a 'grid.' A pilot can take bearings on at least two anywhere in the country, thus obtaining a fix.

"The first is now being installed at Nantucket Island, Mass. Others will be at New Bern, N. C.; Miami; New Orleans; Ft. Wayne, Ind.; Minneapolis; Tulsa, Okla.; Brownsville, Tex.; El Paso; Cheyenne; Great Falls, Mont.; Salt Lake City; San Diego; San Francisco; and Seattle.

"Certainly in the future are several important developments in radar. That again is in itself a subject for a complete and comprehensive talk. We received $80,000 for radio and radar work in our last year's budget! This year we have about $180,000. For next year, we have asked for five times that much, all insignificant when compared to requirements as measured by funds expended for such purposes during the war. Our job, however, is to translate the remarkable achievements of the military in the use of radar during the war to civilian use, to make it practicable as a civilian airways aid.

Many Other Aids—"Many other airway aids are under development at our experimental station at Indianapolis. Instrument landing probably is the most important, and we are continuing to develop the CAA three-element system. One important improvement of the instrument landing system now under development is the completion of work for automatic instrument landing through a hook-up with the automatic pilot. We are doing this at Indianapolis; the Army is working along similar lines; and the Sperry Gyroscope Company is developing a system that contemplates doing the same thing but utilizing microwave frequencies. These are promising developments

(See Airway Aids, page 148)

Low Flying Escapades End in Fatal Accidents

Zoomed at Cars—Henry W. Fischer, of Pine Ridge, S. Dak., and A. C. Williams, of Rosebud, S. Dak., were killed April 27, when they crashed near Rushville, Nebr. Fischer was a private pilot and had flown about 152 hours, all in aircraft of the type involved.

Following a period of generally low and reckless flying, which included a landing between two moving cars and forcing both from the highway, Fischer, accompanied by Williams, landed at the Rushville Airport. Upon departure from there he executed low aerobatics over the field, making several passes at the hangars. He next zoomed a car on a ranch west of Rushville, then pulled up steeply in what appears to have been a wingover. Before recovery was effected the plane hit the ground at a high rate of speed.

Evidence indicated that safety belts were not being used by the occupants and that the spoilers, found in the full open position, were inadvertently applied during the final maneuver. Local weather conditions were not suitable for flying as winds were 35 to 40 mph, extremely gusty, and blowing sand restricted visibility to less than one mile.

Flew Low Over Campus—Charles Thomas Davis, Jr. and Jack Ferrell, both of Clinton, Miss., were killed when they crashed near the Mississippi College Campus June 30. Davis, 21, was a commercial pilot with single and multi-engine land ratings.

Pilot Davis, accompanied by Ferrell as passenger, took off from North Jackson Airpark for a local pleasure flight. He flew low over buildings on the Mississippi College Campus, then entered a sharp left turn at an altitude estimated as 250 feet. During this turn, which pilot-observers stated was made almost entirely with rudder, the plane stalled and went into a spin from which recovery was not effected.

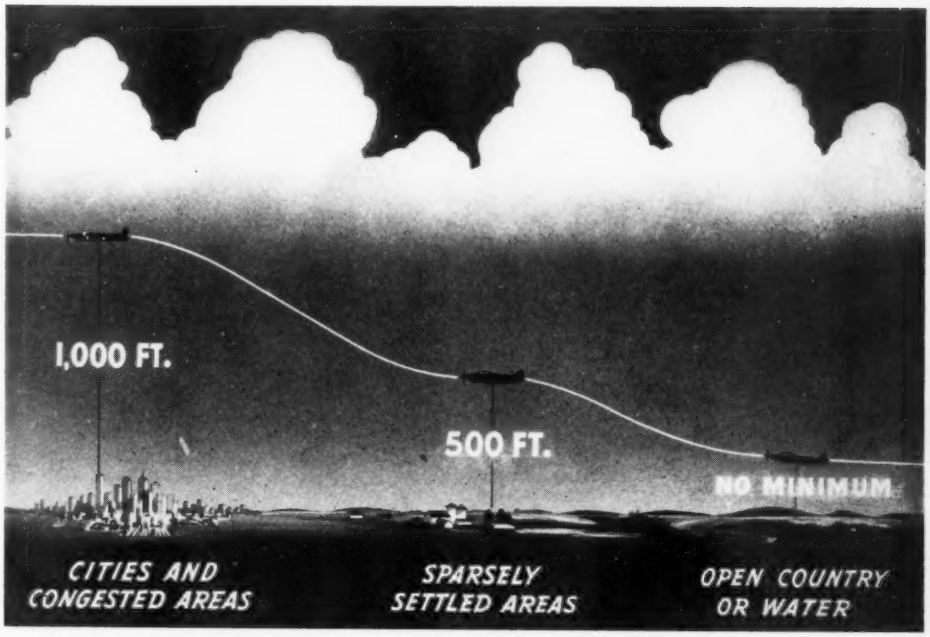
Struck Fence Post—Betty Lyng, 20, was killed at her home near New London, Mo., June 21, when she was struck by an aircraft piloted by a friend, Howard Dale Hampsmire, of Hull, Ill. Hampsmire, 22, a student pilot on his first solo cross-country flight, received minor injuries.

As a part of his flight training under the GI Program, Hampsmire was on his first solo cross-country flight. His return route took him near the home of Miss Lyng and he had advised her prior to the flight that he would come by her house. When he arrived in the area, Miss Lyng was sitting on a fence post waiting for him. After circling the area for 10 or 15 minutes, at an altitude of from 200 to 300 feet, Hampsmire flew within 50 feet of the girl. He then made another "pass" at the fence and struck the post on which she had been sitting. Miss Lyng jumped to the ground an instant before the impact but was unable to get clear of the plane which struck and killed her instantly.

Tree-Top Flying—Student Pilot Raymond H. Smith, 31, of Calexico, Calif., was killed when he crashed 14 miles west of Calexico (approximately 100 yards over the border in Mexico) on April 15. Smith had flown about 34 hours, all in light aircraft.

After being checked out on landings and stalls, Student Pilot Smith took off for a solo practice flight. According to witnesses he flew very low in the vicinity of his mother's home, making several passes at the house and waving to his mother. When at approximately tree-top height he attempted a sharp turn at low speed, stalled and crashed before recovery could be effected. Impact was on the nose and left wing while the plane was in an almost vertical attitude.

That 500-foot Regulation . . . . .



These are the minimums for contact flight—low flying is legal *only* if no hazard exists!

When in August 1945 the Civil Aeronautics Board modified the prohibition against flying lower than 500 feet, it did not—far from it—repeal the law of air common sense. Also, three provisions of the Civil Air Regulations still stood, and although laws generally make dreary reading they are quoted here:

1. CAR 60.100 Authority of Pilot—The pilot in command of an aircraft shall be directly responsible for its safe operation.

2. CAR 60.101 Careless or Reckless Operation—No person shall operate an aircraft in a careless or reckless manner so as to endanger the life or property of another.

3. CAR 60.105 Minimum Safe Altitudes—Except when *necessary* for taking off and landing, aircraft shall be flown:

(*a*) when over the congested areas of cities, towns, settlements, or open-air assemblies of persons, at altitudes sufficient to permit emergency landings outside such areas and *in no case less than 1,000 feet above such areas*, and

(*b*) when elsewhere than as specified in paragraph (*a*), *at an altitude of not less than 500 feet*, except over water or areas where flying at a lower altitude will not involve hazard to persons or property on the surface.

The 500-foot minimum was abolished for the forthright reason of allowing aircraft to be flown legally at low altitudes for utilitarian purposes. There are a number of such operations, including survey of ranch fencing, of pipe and high lines, hunting of predatory animals, crop dusting, mail pick-up and local or even cross-country flying under low ceilings where no hazard exists from obstructions.

But records of the Safety Bureau show an increasing number of crashes apparently caused by pilots who believe that easing of this restriction gave them carte blanche to fly low and recklessly. Some pilots have used the change to get away with diving and zooming and others, no doubt, have thought that the changed regulations condoned anything they wished to do, including the exhibition of their flying skill at house window level.

Obviously this type of flying is illegal under any one of the three above-mentioned provisions of the Civil Air Regulations, and yet it continues probably because of inadequate enforcement and difficulty of proof unless a crash results. This, of course is generally prima facie evidence of recklessness, and a penalty follows. But this is a horse and barn door situation that never should have happened. When a pilot goes below 500 feet the burden of proof that he has not endangered the life of property of another is *on him*. The legal right to fly low exists only if no hazard is created.

Safety Cannot Be Legislated!—It is an added responsibility incumbent on pilots who fly low to conduct their flying with a continually increasing degree of caution as altitude is reduced. Although recklessness and carelessness are not, and obviously cannot be, defined under the law, courts have held repeatedly that such flying as the undue scaring of livestock, flying under bridges, and zooming at houses, do constitute one or the other, or both.

The government does not want to penalize the large number of legally low fliers for the rash acts of the few illegally low ones. However, it may become necessary, if the rate of such crashes increases markedly, to enforce a minimum altitude once again.

Doing this would injure those who make a living or further their business by legal low flying if in no other way than by making it necessary to get a waiver for every low flight. That condition is manifestly a heavy nuisance to a rancher, let us say, who must find a break somewhere in several miles of fence, and who can do this in a few minutes of flight at 50–100 feet altitude.

A better and more equitable solution is for all airmen to realize that although the minimum altitude rule is lifted, that against recklessness still applies and is now being enforced with sharper legal teeth, often following complaint by those who fly low but legally and sanely. So—don't do it unless you have a sound and valid reason—otherwise look out for more stringent regulations!

NOTE—The above is the text of Safety Bulletin No. 171-46 issued by the Safety Bureau of the Civil Aeronautics Board. This bulletin has been printed in pamphlet form, copies of which are available at 5 cents each from the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

Airline Orders

No. 5180 permits Pan American Airways to serve Midway, Wake, Guam and Manila, Philippine Islands on Sept. 16, through the use of Midway Island Naval Air Station, Wake Island Naval Air Station, Guam Island Naval Air Station (Agana Fld.), and Nichols Fld., respectively. (Sept. 16)

No. 5181 grants petitions of the Cities of St. Louis, Mo., Detroit, Mich., Wilmington, N. C., Louisville, Ky., Akron, Ohio, and Tampa, Fla.; the Chambers of Commerce of St. Louis, Nashville and Richmond; the Detroit and Louisville Boards of Trade; the County of New Hanover, N. C.; the State of R. I., and the Louisville and Jefferson County Air Board, leave to intervene in the Latin American Service Case—Docket 525 et al. (Sept. 16)

No. 5182 grants motion of Robert C. Reeve, dba Reeve Airways, for further hearing on the amendment to the application in Docket 2143. (Sept. 16)

No. 5183 dismisses application of Delta Air Lines, Docket 975, for a certificate. (Sept. 17)

No. 5184 authorizes Empire Air Lines to temporarily suspend all service at Burley, Twin Falls and Pullman-Moscow, Idaho, on route 78, and to suspend service temporarily on trips or schedules requiring night operations at Lewiston-Clarkston, Idaho, on route 78. (Sept. 17)

No. 5185 permits Empire Air Lines to serve Boise, Idaho Falls, Pocatello, Burley, Twin Falls, Gooding, Lewiston-Clarkston, Pullman-Moscow and Coeur d'Alene, Idaho; Walla Walla and Spokane, Wash., on Sept. 18, through the use of airports at those cities. (Sept. 17)

No. 5187 grants petition of Delta Air Lines for leave to intervene in the Cincinnati-New York Additional Service proceeding—Docket 221 et al. (Sept. 20)

No. 5188 waives the provisions of sec. 40.291 of the Civil Air Regulations so as to permit Transcontinental & Western Air to operate a certificated C-54 type transport aircraft on an experimental air mail flight from Washington, D. C., to Chicago, Ill., via Dayton, Ohio, on Sept. 25, and from Chicago to New York, N. Y., via Pittsburgh, Pa., on Sept. 26. (Sept. 23)

No. 5192 denies motion of Eastern Air Lines to incorporate into the record of the proceeding pertaining to an agreement between Pan American and Pan American-Grace Airways, dated July 30, 1946, Docket 2423, the entire record of the proceedings in Dockets 707, 744 and 779. (Sept. 21)

No. 5193 permits the Chamber of Commerce of Huntington, W. Va., to intervene in the Great Lakes Area Case proceeding—Docket 535 et al. (Sept. 23)

No. 5194 grants petitions of Braniff, American, Eastern and Pioneer Air Lines for leave to intervene in the application of Continental Airlines to make permanent its certificate for that part of route 29 authorizing service between Hobbs, N. Mex., and San Antonio, Tex.—Docket 2087. (Sept. 23)

No. 5195 temporarily exempts Pennsylvania-Central Airlines from certain requirements of the Act, insofar as they would otherwise prevent Penn-Central from serving Elkins, W. Va., as an intermediate point between Clarksburg and Charleston, W. Va., so long as conditions at the Benedum Airport prevent resumption of service at Clarksburg and so long as the authorization of Penn-Central to engage in transportation at Clarksburg, on route 35, remains in effect. (Sept. 24)

No. 5196 approves Agreements CAB Nos. 680 R 1-14 between Transcontinental & Western Air and certain other air carriers and foreign air carriers relating to establishment of rates, fares and charges. (Sept. 24)

No. 5197 dismisses application of Royal Norwegian Air Transport, Docket 2145, for a foreign air carrier permit. (Sept. 24)

No. 5198 grants petition of the Town of Silver City, N. Mex., for leave to intervene in the Arizona-New Mexico Case—Docket 968 et al. (Sept. 25)

No. 5199 grants petition of the U. S. Maritime Comm. for leave to intervene in Docket 2411. (Sept. 26)

No. 5200 grants application of American Airlines for consolidation of routes 4, 18 and 23; grants application of Pennsylvania-Central Airlines for consolidation of routes 14 and 32 with the restriction that nonstop service shall not be scheduled between Chicago and the following—Cleveland, Pittsburgh, Akron and Youngstown, except on flights originating or terminating at Washington or Norfolk; grants application of United Air Lines for consolidation of routes 1, 62, and 66, with the restriction that nonstop service shall not be scheduled between Chicago and Boston or Chicago and Washington, except on flights originating or terminating at Omaha or points west thereof; amends certificates issued to American, PCA, TWA, and United, for routes to be known as routes 4, 14, 2 and 1, respectively. (Issued with an opinion—Sept. 23)

No. 5201 permits the Mayor and Council of Wilmington, Del., and The Levy Court of New Castle County, Del., to intervene in the Cincinnati-New York Additional Service proceeding—Docket 221 et al. (Sept. 26)

No. 5202 permits the Toledo, Ohio, Chamber of Commerce to intervene in the Detroit-Washington Service proceeding—Docket 679 et al. (Sept. 26)

No. 5203 initiates a Board investigation into the matter of indirect air services in property transportation; makes Railway Express Agency a party to this proceeding; and consolidates this Docket (2540) with the applications in the Freight Forwarder Case (Docket 681 et al.). (Sept. 25)

No. 5205 denies American Airlines' application for approval of the acquisition of control of Mid-Continent Airlines. (Issued with an opinion—Sept. 27)

No. 5207 consolidates applications for certificates of Standard Airlines, National Skyway Freight Corp. and Vernon E. Anderson, et al., in the Air Freight Case—Docket 810, et al.; dismisses application of Skyfreight Airlines and severs Faster Flying Freight's application from Docket 810, et al. (Sept. 27)

No. 5208 permits the State of R. I., the Chambers of Commerce of San Antonio, South Texas, Houston, Beaumont and Fort Worth, Tex., Oakland, Calif., and Grand Rapids, Mich., the Chamber of Commerce and Board of Trade of Philadelphia, Pa., Globe Freight Airlines and the Independent Airfreight Assn. to intervene in the Air Freight Case. (Sept. 27)

No. 5209 denies motion of Empire Airlines to consolidate its application, Docket 2367, with the Middle Atlantic Area Case, Docket 674, et al., or in the alternative, for a separate and immediate hearing of Docket 2367. (Sept. 27)

No. 5210 finds the mail rate previously fixed for National Airlines (Para. B of Board Order No. 2715) to be fair and reasonable for the period prior to Oct. 1, 1946; orders that for the period on and after Oct. 1, 1946, the rate shall be 60 cents per ton-mile or fraction thereof, of mail carried, computed monthly on direct airport-to-airport mileage. (Issued with an opinion—Sept. 29)

No. 5211 dismisses applications of Palmer Airlines (Docket 1492) and Gilbertville Trucking Co. (Docket 2359) for certificates. (Sept. 30)

No. 5212 orders that the applications of Palmer Airlines and Gilbertville Trucking Co., Dockets 1405 and 1129, respectively, both consolidated in the Air Freight Case, be severed and dismissed. (Sept. 30)

No. 5213 dismisses applications of Caribbean Atlantic Airlines, Dockets 2247 and 2248, for certificates. (Sept. 30)

No. 5214 denies motion of Caribbean Atlantic Airlines to consolidate applications (Dockets 2246 through 2248) for hearing and decision. (Sept. 30)

No. E-1 permits the Orleans Airport Commission to intervene in the application of Waterman Steamship Corp. for a temporary certificate authorizing transportation of persons and property between New Orleans, La., and San Juan, P. R. (Oct. 1)

No. E-2 denies petition of Pacific Air Lines for leave to intervene in the West Coast Case—Docket 250, et al.; also denies their request for consolidation of Docket 2268 with the West Coast Case and for the reopening of the record in Docket 250, et al., to receive additional evidence. (Oct. 1)

No. E-3 denies American and Northwest Airlines' petitions for rehearing, reargument and reconsideration of the West Coast Case. (Oct. 1)

No. E-4 denies Pan American Airways' petition for leave to intervene in the West Coast Case, for the deferment of the reargument and reconsideration by the Board of that portion of its opinion and order (No. 4790) which denied Western Air Lines' application in Docket 941 insofar as such application requests authority to engage in transportation between San Francisco and Seattle, and for the consolidation of the reargument and decision respectively on Pan American's pending application in Docket 1803 which includes a request for a route between Los Angeles and Seattle, via San Francisco. (Oct. 1)

No. E-5 temporarily exempts Pan American Airways, from and after Sept. 30, 1946, from the terms of its certificates (Orders 4996 and 5073) so as to permit them to render certain transatlantic services. (Oct. 1)

No. E-6 denies Pan American Airways' request for immediate oral argument re mail rate for transatlantic operations, and allows 7 days for filing supplemental answer. (Oct. 1)

No. E-7 denies Pan American Airways' request for immediate oral argument re mail rate for transpacific operations, and allows 7 days for filing supplemental answer. (Oct. 1)

No. E-8 denies American Overseas Airlines' request for immediate oral argument re mail rate and allows 7 days for filing supplemental answer. (Oct. 1)

No. E-9 approves interlocking relationships re positions held by R. E. S. Deichler in American Airlines and American Overseas Airlines. (Oct. 2)

No. E-10 approves interlocking relationships re positions held by R. E. S. Deichler in American Airlines, American Overseas Airlines and Airborne Instruments Laboratory. (Oct. 2)

No. E-11 consolidates, into one proceeding, applications of Pan American Airways, Chicago and Southern Air Lines and Eastern Air Lines for amendment of certificates so as to permit transportation to and from Montego Bay, Jamaica. (Oct. 3)

No. E-12 denies National Airlines' petition for reconsideration of Board orders which granted the petitions of the City of Atlanta, Ga., and the Chamber of Commerce of Birmingham, Ala., for leave to intervene in the Latin American Service Case—Docket 525, et al. (Oct. 2)

No. E-13 denies motion of Clark M. Carr and Wm. P. Cutter, members of Air Transit Co., an applicant in the Arizona-New Mexico Case, to withhold certain testimony and an exhibit from public disclosure. (Oct. 2)

No. E-14 permits the Orleans Airport Commission of New Orleans, La., to intervene in an agreement between Pan American Airways and Pan American-Grace Airways—Docket 2423. (Oct. 3)

No. E-15 permits the City of Akron, Ohio to intervene in the Detroit-Washington Service proceeding—Docket 679 et al. (Oct. 3)

No. E-16 dismisses application of Southwestern Airlines in the Air Freight Case. (Oct. 4)

No. E-17 temporarily exempts Pennsylvania-Central Airlines from the requirements of sec. 401(a) of the Act insofar as they would otherwise prevent it from serving Elkins, W. Va., as an intermediate point between Clarksburg and Charleston, W. Va. (Oct. 4)

No. E-18 temporarily exempts Pan American-Grace Airways from the provisions of sec. 401 of the Act insofar as they would otherwise prevent Pan American-Grace from engaging in transportation to and from the intermediate point Puerto Suarez, Bolivia, and the terminal point Campo Grande, Brazil, in lieu of the terminal point Corumba, Brazil, and immediate inauguration of nonstop service between Santa Cruz, Bolivia and Campo Grande, Brazil. (Oct. 4)

No. E-19 permits the City of Houston, Tex., and the Chamber of Commerce of Delaware, Inc., leave to intervene in the Air Freight Case. (Oct. 4)

No. E-20 orders that the application for a certificate, filed by Airnews, Inc., be consolidated in the Air Freight Case. (Oct. 4)

No. E-21 grants to certain newly certificated carriers temporary exemption from provisions of the Act and Economic Regulations which require filing of Form 2780 reports. (Oct. 4)

No. E-22 denies petition of Eastern Air Lines insofar as it seeks exemptions pursuant to sec. 416(a) of the Act. (Oct. 4)

No. E-23 denies Pennsylvania-Central Airlines' application for an exemption from certain provisions of the Act so that nonstop flights between Washington, D. C. and Chicago, Ill. might be conducted. (Oct. 4)

No. E-24 denies Delta Air Lines' application for an exemption from certain provisions of the Act so that nonstop flights between Atlanta-Jacksonville and Atlanta-Miami might be conducted. (Oct. 4)

No. E-25 authorizes Western Air Lines to suspend service temporarily at West Yellowstone, Mont., on route 19, from Sept. 16, 1946 to June 14, 1947, inclusive, and from Sept. 16 to June 14, inclusive, each year thereafter. (Oct. 4)

No. E-26 denies petition of Southern Commercial Air Transport to reopen the record in the Mississippi Valley Case. (Oct. 4)

No. E-27 denies petition of the Port of New York Authority for leave to intervene in an agreement between Pan American Airways and Pan American-Grace Airways, Docket 2423. (Oct. 9)

No. E-28 amends Board order No. 4884, so as to limit the proceeding to the single issue of whether the air-freight contract between Railway Express and Northwest Airlines is in violation of the Act. (Oct. 5)

No. E-29 severs part of the petition of Railway Express Agency concerning Agreement CAB 617 from Docket 2340 and assigns it Docket 2557. (Oct. 5)

No. E-30 consolidates Docket 2557 (see order No. E-29) with Docket 681 et al., known as the Freight Forwarder Case. (Oct. 5)

No. E-31 permits Pan American Airways, Chicago and Southern, Eastern, and National Airlines, and the Depts. of Interior and Justice to intervene in the application of Waterman Steamship Corp. and Waterman Airlines for a temporary certificate authorizing transportation of persons and property between New Orleans, La., and San Juan, P. R.; denies motions of Waterman Steamship Corp. and Waterman Airlines requesting that petitions of the four above-mentioned airlines be denied. (Oct. 7)

No. E-32 dismisses application of Wien Alaska Airlines, Docket 2252. (Oct. 9)

No. E-33 permits Pan American-Grace Airways to serve Campo Grande, Brazil on Oct. 9, through the use of Campo Grande Airport. (Oct. 9)

No. E-34 dismisses application of Ohio Intra-State Airlines, Docket 2429. (Oct. 10)

No. E-35 denies petition of Pacific Northern Airlines requesting reconsideration of Board order No. 5165. (Oct. 9)

No. E-36 orders that the entire record of the proceeding concerning an Agreement between Pan American Airways and Pan American-Grace Airways relating to through service at Balboa (Docket 2423) be certified to the Board by the examiner for initial decision. (Oct. 11)

No. E-37 permits Chicago & Southern Air Lines to serve Havana, Cuba, on Oct. 15, through the use of Rancho Boyeros Airport. (Oct. 14)

No. E-38 denies the City of Miami, Fla., and the Dade County Port Authority leave to intervene in an agreement between Pan American Airways and Pan American-Grace Airways, dated July 30, 1946. (Oct. 11)

No. E-39 orders that the proceeding concerning the application of Air Commuting, Inc., for a certificate (Docket 1642) be reopened for further hearing before a Board examiner. (Oct. 16)

No. E-40 denies motion of Arizona Airways to reopen the record to receive additional evidence on Docket 2005. (Oct. 15)

No. E-41 dismisses proceeding concerning the amended certificate of Alaska Airlines authorizing transportation between Anchorage and Seward, Alaska. (Oct. 16)

No. E-42 directs Pacific Northern Airlines to show cause why the Board should not direct that its certificate authorizing transportation of persons and property (except mail) between Anchorage and Seward, Alaska, cease to be effective because such service has not been operated by Pacific Northern during the period from June 25 to Sept. 25, 1946. (Oct. 16)

No. E-43 denies petition of Colonial Airlines, filed on Feb. 2, 1943, requesting an increase in the mail rate for routes 72 and 72F; permits Colonial to withdraw objections to the Board's "show cause" order. (Issued with an opinion—Oct. 17)

No. E-44 fixes the temporary rate of compensation to be paid Transcontinental & Western Air in its transatlantic operations for the transportation of mail for the period on and after Feb. 5, 1946, to be 75 cents per United States mail ton-mile, or fraction thereof, computed monthly on a direct airport-to-airport statute mileage basis; orders that the proceeding remain open pending entry of an order fixing a final rate retroactive to Feb. 5, 1946. (Issued with an opinion—Oct. 18)

No. E-45 grants Monarch Air Lines permission to serve Denver, Colorado Springs, Pueblo, Canon City, Alamosa-Monte Vista and Durango, Colo., on route 73 on Oct. 18, through the regular use of Stapleton Airfield, Peterson Field, Pueblo Municipal Airport, Fremont County Airport, Monte Vista Municipal Airport and Durango Municipal Airport, respectively. (Oct. 18)

No. E-46 permits Monarch Air Lines to suspend service temporarily at Cortez, Colo., and Gallup, N. Mex., on route 73. (Oct. 18)

No. E-47 permits E. W. Wiggins Airways to intervene in the application of Pennsylvania-Central Airlines Corp., for approval of proposed merger of Northeast Airlines with Penn-Central and of the transfer of the certificates of Northeast to Penn-Central—Docket 2168. (Oct. 21)

No. E-48 permits the Youngstown Chamber of Commerce to intervene in the Detroit-Washington Service proceeding—Docket 679 et al. (Oct. 22)

No. E-49 temporarily exempts Pan American Airways from the provisions of sec. 401(a) of the Act and from the terms, limitations and conditions of its amended certificate (Order 4996) insofar as they would otherwise prevent Pan American from serving Damascus, Syria, in lieu of Beirut, Lebanon; provides that the temporary exemption granted by this order shall terminate

New Numbering System

The new serial numbers following order 5215 in this issue mark the changeover to a new numbering system devised by the Board to indicate whether the order concerns economic or safety regulation. Until now the orders have borne consecutive serial numbers regardless of type.

All those in the "E" series deal with service and economic regulation of air transportation, while those in the "S" series deal with safety regulation. The safety series is broken down further, with the letters "SD" representing decisions made by the Board staff, and the letter "S" indicating the orders which have been referred to Board members for decision.

when necessary improvements to the airport at Beirut, Lebanon, for the accommodation of four-engined land-plane equipment, have been completed. (Oct. 21)

No. E-50 directs Trans-Luxury Airlines to show cause why it should not be ordered to cease and desist from engaging in scheduled air transportation in violation of sections 401(a) and 610(a)(1) of the Act. (Oct. 22)

No. E-51 directs American Air Export and Import Co. to show cause why it should not be ordered to cease and desist from engaging in scheduled air transportation in violation of sections 401(a) and 610(a)(1) of the Act. (Oct. 22)

Airman Orders

Suspensions

No. 5186 suspends airman certificate of David B. Blackmon for 3 months because, while holder of a student certificate, he carried a passenger other than a certificated instructor, in violation of the provisions of sec. 20.720 of the Civil Air Regulations. (Sept. 20)

No. S-1 suspends until Oct. 9, 1946, private certificate of Charles A. Sebastian because he piloted an aircraft under instrument flight rules when he did not hold a valid instrument rating, contrary to the provisions of sec. 43.65 of the Regulations. (Oct. 1)

No. SD-1 suspends student certificate of Graham C. Blood for 6 months because he flew at less than 500 feet above the ground over an area where such flying involved a hazard to persons and property on the surface, contrary to the provisions of sec. 60.105(b) of the Regulations. Blood also violated other provisions of the Regulations. (Aug. 30)

No. SD-2 suspends student certificate of Joseph W. Hobbs for 6 months because he piloted an aircraft over congested areas of West Liberty and West Branch, Iowa, at an altitude of 60 feet, contrary to the provisions of sec. 60.105(a) of the Regulations. Hobbs also violated other provisions of the Regulations. (Sept. 1)

No. SD-3 suspends private pilot certificate of Forrest N. Jones for 6 months because he violated the provisions of sec. 60.105(b) of the Regulations. Jones also violated other provisions of the Regulations. (Sept. 4)

No. SD-7 suspends commercial certificate of Harold B. Donnelly for 6 months because he piloted an aircraft as low as 150 feet over a congested residential area of Grosse Pointe, Mich., contrary to the provisions of sec. 60.105(a) of the Regulations. Donnelly also violated other provisions of the Regulations. (Sept. 10)

No. SD-8 suspends student certificate of Clayton C. Dovey, Jr., for 6 months because he violated the provisions of sec. 60.105(b) of the Regulations. Dovey also violated other provisions of the Regulations. (Sept. 13)

No. SD-11 orders that any pilot certificate held by Raymond A. Naylor be suspended until he passes the flight test required for the issuance of a commercial pilot rating. (Sept. 19)

No. SD-12 suspends commercial certificate of Jos. C. Tuck for 6 months because he violated the provisions of sections 60.105(a) and 60.101 of the Regulations. (Oct. 1)

No. SD-13 suspends commercial certificate of Charles T. Riddling for 30 days because he failed to conform to the traffic pattern of the Vernal Utah Airport, contrary to the provisions of sec. 60.106(c) of the Regulations. (Oct. 1)

No. SD-14 suspends commercial certificate of Kenneth H. Florance for 6 months because he violated the provisions of sections 60.105(a) and 60.101 of the Regulations. (Oct. 4)

No. SD-16 suspends commercial certificate of Jos. W. Shuster for 30 days because he violated the provisions of sec. 43.109 of the Regulations. (Sept. 22)

No. SD-17 suspends commercial certificate of John R. Wagner for 6 months because he violated the provisions of sections 60.700, 60.3500 and 43.109 of the Regulations. (Sept. 19)

No. SD-19 suspends student certificate of Steven Kmecik for 6 months because he violated the provisions of sections 60.101 and 60.105(b) of the Regulations. (Sept. 26)

No. SD-20 suspends private certificate of Richard S. Hiatt, Jr., for 6 months because he violated the provisions of sections 60.105(b), 60.106(c) and 60.101 of the Regulations. (Sept. 24)

Revocations

No. 5215 vacates order No. 4602 which suspended the student certificate of Ralph Cummins until July 2, 1946 and reinstates order No. 4316 which revoked his certificate and provided he should not be issued any type of pilot certificate prior to Dec. 7, 1946. (Sept. 30)

No. SD-4 revokes student certificate of Thomas K. Kjellman because he violated the provisions of sections 43.52(b), 43.52(c), 60.105(a), 43.408 and 60.101 of the Regulations. (Sept. 5)

No. SD-5 revokes private certificates of Wm. H. Harrison, Jr., because he violated the provisions of sections 43.406, 60.106(b), 60.106(a) (1) and (2) and 60.101 of the Regulations. (Sept. 10)

No. SD-6 revokes student certificate of Robert G. Barstow because he violated the provisions of sections 60.105(a), and 60.101 of the Regulations. (Sept. 10)

No. SD-9 revokes private certificate of Floyd R. Henderson, Jr., because he violated the provisions of sections 60.105(a), 60.104(b) and 60.101 of the Regulations. (Sept. 14)

No. SD-10 revokes student certificate of Jack A. Abercrombie because he violated the provisions of sections 43.50, 60.105(b) and 60.101 of the Regulations. (Sept. 14)

No. SD-15 revokes any airman certificate held by Eugene Glover, because, while the holder of a student certificate, he piloted an aircraft and carried a passenger, contrary to the provisions of sec. 43.50 of the Regulations. Glover also "presented false and misleading documents and information to the Civil Aeronautics Administration * * * and thereby wrongfully obtained a commercial pilot certificate." (Oct. 5)

No. SD-18 revokes commercial certificate of Henry E. Repp, Jr., because he violated the provisions of sections 60.104(b), 60.105(a), and 60.101 of the Regulations. (Sept. 24)

No. SD-21 revokes student certificate of Wm. F. Faulk because he violated the provisions of sections 43.50, 60.105(b) and 60.101 of the Regulations. (Sept. 10)

Miscellaneous

No. 5189 dismisses complaint of the Administrator of Civil Aeronautics which alleged that Gene Lawson, Jr., who holds a commercial certificate, had violated the provisions of sections 60.105(a) and 60.101 of the Regulations. (Sept. 21)

No. 5190 grants the Administrator of Civil Aeronautics leave to withdraw a complaint concerning Raymond F. Proffitt who holds an airline transport pilot certificate with flight instructor rating. (Sept. 21)

No. 5191 grants the Administrator of Civil Aeronautics leave to withdraw a complaint concerning Aero Services, Inc. (Sept. 21)

No. 5204 dismisses complaint of the Administrator of Civil Aeronautics which alleged that Frederick A. Keown, who holds a mechanic certificate with aircraft and aircraft engine ratings, had violated the provisions of sec. 01.24 of the Regulations. (Sept. 26)

No. 5206 dismisses complaint of the Administrator of Civil Aeronautics which alleged that Paul P. Fielding, who holds a mechanic certificate with aircraft and engine ratings, had violated the provisions of sec. 01.24 of the Regulations. (Sept. 26)

No. S-2 denies request of Herbert M. Matzdorf for waiver of sec. 20.01 of the Regulations. (Oct. 4)

Air Regulations . . . *As of November 1, 1946*

Title	No.	Part: Price	Part: Date	Part: No. of Amendments	Manual: Price	Manual: Date	Manual: No. of Amendments
Aircraft							
Airworthiness Certificates	01	$0.05	10/15/42	1	None	None	.....
Type and Production Certificates	02	.05	7/1/46	.....	$0.10	8/1/46	.....
Airplane Airworthiness—Normal, Utility, Acrobatic, and Restricted Purpose Categories	03[1]	Free	11/13/45	.....	None	None	.....
Airplane Airworthiness	04	.15	11/1/43	4	.45	7/1/44	2
Airplane Airworthiness Transport Categories	04-0[1]	Free	11/9/45	1	None	None	.....
Rotorcraft Airworthiness	06	.10	5/24/46	.....	None	None	.....
Engine Airworthiness	13	.05	8/1/41	.....	None	None	.....
Propeller Airworthiness	14	.05	7/15/42	1	.15	5/1/46	.....
Equipment Airworthiness	15	.05	5/31/46	.....	No stock	7/1/38	.....
Radio Equipment Airworthiness	16	.05	2/13/41	.....	Free	2/13/41	.....
Maintenance, Repair, and Alteration of Aircraft, Engines, Propellers, Instruments	18	.05	9/1/42	.....	.50	6/1/43	.....
Airmen							
Pilot Certificates	20	.05	7/1/45	3	None	None	.....
Airline Pilot Rating	21	.05	10/1/42	3	None	None	.....
Lighter-than-air Pilot Certificates	22	.05	10/15/42	1	None	None	.....
Mechanic Certificates	24	.05	7/1/43	1[2]	None	None	.....
Parachute Technician Certificates	25	.05	12/15/43	3	None	None	.....
Traffic Control Tower Operator Certificates	26	.05	10/10/45	1	None	None	.....
Aircraft Dispatcher Certificates	27	.05	7/1/46	[3]	None	None	.....
Physical Standards for Airmen	29	.05	1/10/46	.....	None	None	.....
Operation Rules							
Air Carrier Operating Certification	40	.10	7/10/46	[4]	None	None	.....
Scheduled Air Carrier Operations Outside Continental U. S.	41	.05	5/1/46	3	None	None	.....
Nonscheduled Air Carrier Certification and Operation Rules	42	.05	8/1/46	2	None	None	.....
General Operation Rules	43	.05	7/1/45	5	None	None	.....
Foreign Air Carrier Regulations	44	.05	7/1/45	.....	None	None	.....
Transportation of Explosives and other Dangerous Articles	49	.05	7/1/45	.....	None	None	.....
Air Agencies							
Airman Agency Certificates	50	.05	4/30/46	.....	.15	5/15/46	.....
Ground Instructor Rating	51	.05	12/15/43	1	None	None	.....
Repair Station Rating	52	.05	10/1/42	.....	Free	2/41	.....
Mechanic School Rating	53	.05	8/1/42	1	Free	5/40	.....
Parachute Loft Certificates and Ratings	54	.05	1/21/43	.....	None	None	.....
Air Navigation							
Air Traffic Rules	60	.05	8/1/45	2[4]	.15	10/45	.....
Scheduled Air Carrier Rules	61	.10	8/1/46	2[4]	None	None	.....
Miscellaneous							
Rules of Practice Governing Suspension and Revocation Proceedings	97	Free	8/9/46	.....	None	None	.....
Definitions	98	.05	10/15/42	.....	None	None	.....
Mode of Citation	99	Free	11/15/40	.....	None	None	.....
Regulations of the Administrator							
Aircraft Registration Certificates	501	Free	3/31/43	.....	None	None	.....
Recordation of Aircraft Ownership	503	Free	3/31/43	.....	None	None	.....
Notice of Construction or Alteration of Structures on or near Civil Airways	525	Free	7/23/43	.....	None	None	.....
Seizure of Aircraft	531	Free	12/8/41	.....	None	None	.....
Reproduction and Dissemination of Current Examination Materials	532	Free	1/15/43	.....	None	None	.....

[1] Certain aircraft may comply with the provisions of this part or the 11/1/43 edition of Part 04. [2] Special regulations 340 and 340A. [3] Special regulation 355. [4] Special regulation 361A.

Note: Those parts and manuals for which there is a price are obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Remittances should be by check or money order, payable to the Superintendent. Currency is sent at sender's risk. Amendments and free Parts are obtained from the Publications Section, Civil Aeronautics Board, Washington 25, D. C.; free Manuals and Regulations of the Administrator from the CAA Office of Aviation Information, Dept of Commerce, Washington 25, D. C

Foreign Flight Permits

Foreign CAA field offices as well as CAA border inspectors may now issue permits for flights of foreign aircraft into the United States. Such permits, issued only for non-commercial flights by foreign visitors, can be obtained from CAA representatives in Balboa, Canal Zone; Cairo, Egypt; London, England; Paris, France; Rio de Janeiro, Brazil; Mexico City, Mexico; and Lima, Peru.

National's Rate of Mail Pay Set at 60 Cents a Ton-mile

National Airlines' new mail pay rate was placed on a ton-mile basis October 1 in accordance with the CAB's method of paying carriers who require only compensation for carrying mail, and do not need assistance in other classes of traffic. Need carriers are paid on the plane-mile basis.

National's new rate per ton-mile is 60 cents, the same service mail rate ordered by the Board for other carriers of comparable size and volume of operations. The old rate of 9.50 cents per plane-mile yielded the carrier approximately 61 cents per ton-mile, for the period February 1, 1944 to September 30, 1946.

On the basis of 766,500 ton-miles of mail service estimated for National, the total mail compensation for a future 12-month period will be $459,900.

Domestic and Territorial Air Carrier Statistics

Operations for September 1946

Prepared from official reports submitted by the carriers listed, to the Civil Aeronautics Board

Operator and routes	Revenue miles flown	Revenue passengers carried [a]	Revenue passenger-miles flown	Express and freight carried (tons)	Ton-miles flown		Passenger seat-miles flown	Revenue passenger load factor (percent)
					Express	Freight		
All American Aviation, Inc., Pittsburgh-Huntington, Cincinnati, Jamestown, Williamsport, Harrisburg, Philadelphia **Total**	**148,265**	**0**	**0**	**11 4**	**1,590**	**0**	**0**	
American Airlines, Inc. **Total**	**5,710,311**	**262,366**	**136,485,944**	**2,368 0**	**444,959**	**661,857**	**161,153,299**	**84 69**
Los Angeles-Dallas	1,634,452	44,384	39,752,328	210 0	80,630	145,996	45,335,720	87 68
Boston-Cleveland; New York/Newark-Chicago	1,162,889	68,186	26,912,850	817 0	163,702	161,818	30,179,516	89 18
Boston-New York/Newark	345,053	51,419	8,604,389	160 0	24,216	43,594	10,338,951	83 22
Cleveland-Nashville	144,874	12,576	2,590,976	77 0	8,751	8,619	3,010,356	86 07
New York/Newark-Fort Worth or Oklahoma City	1,508,684	76,086	37,377,913	474 0	122,338	176,378	45,712,531	81 77
Washington-Chicago	235,740	13,708	5,911,915	88 0	15,335	20,066	6,839,858	86 43
Chicago-Fort Worth	458,450	26,534	11,752,595	145 0	29,743	38,961	15,069,394	77 99
Buffalo-Toronto	12,610	3,105	214,245	7 0	244	244	260,475	82 25
El Paso, Fort Worth or Dallas-Mexico City	207,559	4,164	3,368,733	90 0	0	66,191	4,106,498	76 45
Braniff Airways, Inc. **Total**	**1,067,844**	**55,413**	**21,140,665**	**156 2**	**44,777**	**17,894**	**28,539,458**	**74 08**
Chicago-Dallas	459,593	22,450	10,858,273	65 7	27,917	11,124	14,710,205	73 81
Denver-Memphis; Dallas-Brownsville or Galveston	540,976	32,823	9,342,024	75 9	15,265	6,231	12,452,482	75 02
Houston-Nuevo Laredo or Corpus Christi	67,275	4,809	940,368	14 6	1,595	419	1,376,771	68 30
Caribbean-Atlantic Airlines, Inc., San Juan-Mayaguez or Christiansted **Total**	**26,018**	**4,369**	**275,587**	**5 4**	**0**	**416**	**704,137**	**39 14**
Chicago & Southern Air Lines, Inc. **Total**	**753,100**	**35,822**	**13,727,943**	**131 0**	**41,787**	**8,878**	**20,007,063**	**68.62**
Chicago-New Orleans	383,273	22,064	7,821,129	77 0	27,877	4,314	11,551,675	67 71
Houston-Detroit	369,827	17,760	5,906,814	54 0	13,910	4,564	8,455,388	69 86
Colonial Airlines, Inc **Total**	**310,989**	**16,717**	**5,070,451**	**24 7**	**5,160**	**0**	**6,333,984**	**80 05**
Washington-Montreal or Ottawa	78,349	3,305	931,440	6 5	1,196	0	1,464,213	63 61
New York-Burlington-Montreal or Ottawa	232,640	13,412	4,139,011	18 2	3,964	0	4,869,771	84 99
Continental Air Lines, Inc. **Total**	**547,195**	**21,377**	**8,125,629**	**38 5**	**5,889**	**10,628**	**11,421,671**	**71 14**
El Paso-Denver, San Antonio & Tulsa	278,755	12,554	3,844,787	15 0	3,327	1,827	5,841,509	65 82
Pueblo-Tulsa	43,024	3,890	614,148	3 7	333	214	901,739	68 11
Denver-Kansas City	225,416	8,327	3,666,694	19 8	2,229	8,587	4,678,423	78 37
Delta Air Lines, Inc. **Total**	**1,038,462**	**50,766**	**20,195,294**	**230 0**	**41,957**	**48,554**	**29,650,119**	**68 11**
Fort Worth-New Orleans, Charleston or Savannah	545,356	33,389	10,763,064	78 0	19,329	7,771	15,146,455	71 06
Chicago-Miami	493,105	24,457	9,432,230	152 0	22,628	40,783	14,503,664	65 03
Eastern Air Lines, Inc. **Total**								
Boston-Brownsville or San Antonio								
Miami-Boston or Detroit								
Chicago-Jacksonville								
Miami-Tallahassee; Tallahassee-Atlanta or Nashville								
St. Louis-Washington or Nashville								
Hawaiian Airlines, Ltd., Honolulu-Hilo or Port Allen **Total**	**191,621**	**20,775**	**2,961,003**	**278 6**	**8,720**	**32,902**	**3,968,010**	**74 62**
Inland Air Lines, Inc. **Total**	**164,367**	**8,373**	**2,305,813**	**11 0**	**1,970**	**569**	**3,330,911**	**69 22**
Denver-Great Falls	103,232	6,259	1,561,841	7 3	1,476	169	2,144,762	72 82
Huron-Cheyenne	61,135	2,687	743,972	3 7	494	400	1,186,149	62 72
Mid-Continent Airlines, Inc. **Total**	**476,066**	**23,817**	**7,172,379**	**30 7**	**10,430**	**0**	**9,572,527**	**74 93**
New Orleans-Minneapolis-Minot	353,088	17,183	5,116,941	25 6	8,913	0	7,009,983	73 00
Minneapolis-Kansas City & St. Louis	122,978	7,151	2,055,438	5 1	1,517	0	2,562,544	80 21
National Airlines, Inc. **Total**	**808,812**	**27,637**	**16,669,759**	**37 4**	**20,471**	**4,484**	**21,673,917**	**76 91**
New York/Newark-Miami & Key West	570,178	19,627	12,624,825	27 2	15,489	4,160	16,020,187	78 81
New Orleans-Jacksonville & Miami	238,634	10,008	4,044,934	10 2	4,982	324	5,653,730	71 54
Northeast Airlines, Inc., New York/Newark-Caribou or Boston; Boston or Burlington-Montreal; Bangor-Moncton **Total**	**415,132**	**45,331**	**9,217,232**	**82 0**	**13,299**	**0**	**13,443,051**	**68 57**
Northwest Airlines, Inc., N. Y. & Chicago-Seattle & Portland; Grand Forks-Winnipeg (Routes consolidated July 20, 1946) **Total**	**1,785,903**	**69,713**	**43,152,815**	**183 7**	**112,304**	**0**	**50,688,606**	**85 13**
Pennsylvania-Central Airlines Corporation **Total**	**1,570,687**	**146,654**	**39,274,600**	**822 0**	**119,705**	**60,436**	**55,327,474**	**70 99**
Norfolk-Detroit	586,832	84,614	17,473,171	365 0	46,386	23,514	23,152,489	75 47
Detroit-Milwaukee or Chicago	404,791	46,803	8,774,527	229 0	33,331	10,673	13,250,661	66 22
Washington-Buffalo	105,831	6,814	1,523,725	25 0	2,542	528	2,205,563	69 09
Detroit-Sault Ste. Marie	53,099	5,129	771,002	12 0	1,220	135	1,114,171	69 20
Pittsburgh-Buffalo	62,758	4,453	799,208	26 0	3,402	1,308	1,301,283	61 42
Norfolk-Knoxville	81,488	4,533	1,035,970	13 0	2,002	972	1,704,375	60 78
New York/Newark-Birmingham	270,888	25,647	8,896,997	152 0	30,822	23,306	12,598,932	70 62
Pioneer Air Lines, Inc., Houston-Amarillo **Total**	**85,394**	**1,963**	**529,129**	**2 4**	**543**	**0**	**2,012,706**	**26 29**
Transcontinental & Western Air, Inc. **Total**	**3,985,793**	**90,551**	**71,533,206**	**1,210 0**	**377,708**	**262,087**	**82,884,262**	**86 30**
New York/Newark-Los Angeles	2,763,937	73,374	50,142,178	718 0	263,130	173,231	57,541,345	87 14
Dayton-Chicago	71,658	5,680	1,211,052	18 0	5,061	3,441	1,486,584	81 47
Winslow-San Francisco	285,750	13,900	4,684,865	56 0	12,286	9,729	6,188,638	75 70
Kansas City-New York/Newark or Pittsburgh	543,367	18,143	9,796,790	240 0	75,600	58,925	11,024,883	88 86
St. Louis-Detroit	168,277	10,479	2,972,058	108 0	14,522	11,310	3,487,995	85 21
Dayton-Washington	94,243	5,205	1,696,468	19 0	3,940	820	1,961,116	86 51
Pittsburgh-Boston	58,561	2,691	1,029,795	21 0	3,169	4,631	1,193,701	86 27
United Air Lines, Inc. **Total**	**4,853,393**	**180,744**	**110,685,111**	**1,469 0**	**536,248**	**445,485**	**125,698,524**	**88 06**
New York/Newark-Oakland	3,084,068	96,176	73,004,594	1,073 0	453,579	330,990	82,115,977	88 90
Salt Lake City-Seattle-Spokane	288,542	14,769	6,810,727	48 0	19,220	26,035	8,007,683	85 05
Seattle-San Diego	1,237,985	65,214	25,542,463	286 0	45,464	81,278	29,214,913	87 43
Denver-Cheyenne	10,944	848	81,408	2 0	100	97	229,824	35 42
Seattle-Vancouver	30,098	5,503	680,414	12 0	1,416	375	800,104	85 04
Toledo-Washington	90,100	5,180	1,996,247	12 0	3,088	1,744	2,367,049	84 33
Cleveland-Boston	95,456	5,004	2,363,230	35 0	13,381	4,952	2,621,868	90 14
Los Angeles-Catalina	16,200	4,640	206,028	1 0	0	14	341,106	60 40
Western Air Lines, Inc. **Total**	**850,071**	**51,972**	**22,931,124**	**141 5**	**35,553**	**21,945**	**31,225,415**	**73 44**
San Diego-Salt Lake City	267,750	17,148	4,851,940	37 5	8,181	3,723	6,404,210	75 76
Salt Lake City-Great Falls	92,845	4,433	1,277,950	15 8	2,614	808	1,915,042	67 30
Great Falls-Lethbridge	9,761	902	128,883	1 2	146	2	198,359	64 97
Los Angeles-San Francisco or Oakland	227,751	24,146	7,903,735	56 0	8,120	10,167	11,166,552	70 78
Los Angeles-Denver	251,964	11,741	8,768,616	31 0	16,492	7,245	11,541,252	75 98
Total								

[a] The total passengers carried for each airline is an unduplicated figure.

Domestic and Territorial Air Carrier Statistics—Concluded

Operations for the First Nine Months of 1946 As Compared With the Same Period of 1945

Operator	Revenue miles flown January–September		Revenue passengers carried[a] (unduplicated) January–September		Revenue passenger miles flown January–September		Express and freight carried (tons) January–September	
	1946	1945	1946	1945	1946	1945	1946	1945
All American Aviation, Inc.	1,309,966	1,087,612	0	0	0	0	66.8	58.8
American Airlines, Inc.	45,201,997	32,843,937	1,749,299	934,379	918,496,081	544,318,441	12,181.0	10,786.5
Braniff Airways, Inc.	8,377,264	5,805,576	386,489	236,222	157,318,986	103,664,717	1,226.0	811.3
Caribbean-Atlantic Airlines, Inc.	247,176	204,079	36,319	22,821	2,194,962	1,401,905	61.3	106.9
Chicago & Southern Air Lines, Inc.	6,026,297	3,602,200	264,278	136,477	104,891,744	58,705,046	870.9	667.7
Colonial Airlines, Inc.	2,343,478	1,403,790	118,690	66,613	35,237,856	20,050,072	147.9	86.2
Continental Air Lines, Inc.	4,131,025	2,506,625	159,116	85,608	59,158,757	33,091,296	216.4	166.5
Delta Air Lines, Inc.	7,941,210	4,177,420	369,999	195,581	152,377,060	74,131,652	847.0	503.2
Eastern Air Lines, Inc.		18,709,162		637,034		317,153,782		3,106.4
Hawaiian Air Lines, Ltd.	1,395,435	862,094	182,256	113,816	25,977,434	16,290,322	2,154.7	2,405.4
Inland Air Lines, Inc.	1,500,055	1,198,622	62,207	43,196	17,207,883	12,775,210	63.5	39.5
Mid-Continent Airlines, Inc.	3,773,771	2,217,714	185,091	102,877	56,185,905	28,029,622	262.9	151.4
National Airlines, Inc.	6,597,364	4,314,171	208,367	111,924	122,993,830	52,331,858	290.5	203.3
Northeast Airlines, Inc.	2,913,419	1,481,075	302,414	115,284	61,538,363	24,661,254	340.0	152.9
Northwest Airlines, Inc.	13,554,394	8,313,669	461,925	233,390	283,503,823	146,206,913	1,348.5	1,149.7
Pennsylvania-Central Airlines Corp.	12,985,007	7,680,346	1,010,994	528,354	284,027,909	129,376,812	3,948.0	3,033.6
Pioneer Air Lines, Inc.	728,243	111,973	14,041	1,187	4,058,545	351,630	13.7	.9
Transcontinental & Western Air, Inc.	33,502,084	22,398,643	733,123	405,225	622,901,317	363,726,591	8,004.0	6,751.6
United Air Lines, Inc.	40,504,647	27,591,015	1,326,467	541,878	800,412,256	418,029,694	7,090.4	4,684.7
Western Air Lines, Inc.	6,220,462	3,737,468	354,395	161,700	140,793,573	67,039,264	956.7	537.9
Total		150,250,191		4,673,566		2,411,336,081		35,404.4
Index (1945=100)		100.00		100.00		100.00		100.00

Operator	Ton miles flown				Passenger seat-miles flown January–September		Revenue passenger load factor (percent) January–September	
	Express January–September		Freight January–September					
	1946	1945	1946	1945	1946	1945	1946	1945
All American Aviation, Inc.	8,518	9,141	0	0	0	0	–	–
American Airlines, Inc.	3,107,182	4,744,971	3,334,724	446,574	1,073,488,556	603,274,755	85.56	90.23
Braniff Airways, Inc.	373,926	386,072	134,443	0	190,817,576	115,693,235	82.44	89.59
Caribbean-Atlantic Airlines, Inc.	1,796	7,200	2,894	1,645	4,673,579	2,610,795	46.97	53.70
Chicago & Southern Air Lines, Inc.	313,644	276,191	10,793	0	141,895,969	74,646,709	73.92	78.64
Colonial Airlines, Inc.	40,539	24,835	0	0	47,193,623	25,120,535	74.67	79.82
Continental Air Lines, Inc.	47,034	73,082	13,242	0	86,030,952	41,367,087	68.76	79.99
Delta Air Lines, Inc.	334,180	184,092	73,201	0	203,576,278	86,864,074	74.85	85.34
Eastern Air Lines, Inc.		1,807,810		32,427		363,249,802		87.31
Hawaiian Air Lines, Ltd.	81,466	295,885	245,350	68,745	29,516,976	17,304,696	88.01	94.14
Inland Air Lines, Inc.	13,845	8,629	1,347	0	26,759,209	17,641,742	64.31	72.41
Mid-Continent Airlines, Inc.	92,081	44,114	0	0	74,256,481	37,965,857	75.66	73.83
National Airlines, Inc.	167,069	101,296	4,484	0	152,304,462	58,098,295	80.76	90.07
Northeast Airlines, Inc.	58,108	27,996	0	0	86,247,768	33,747,186	71.35	73.08
Northwest Airlines, Inc.	771,762	632,466	0	0	326,309,544	165,244,676	86.88	88.48
Pennsylvania-Central Airlines Corp.	804,595	662,991	85,985	0	380,790,256	158,316,542	74.59	81.72
Pioneer Air Lines, Inc.	4,357	261	0	0	8,426,742	716,622	48.16	49.07
Transcontinental & Western Air, Inc.	2,936,161	3,393,534	1,554,665	12,025	719,654,482	401,428,320	86.56	90.61
United Air Lines, Inc.	3,547,335	3,622,369	2,257,047	0	921,106,559	437,105,882	86.59	95.64
Western Air Lines, Inc.	261,068	218,860	100,188	0	179,015,138	76,765,507	78.65	87.33
Total		16,521,795		561,416		2,717,162,317		88.74
Index (1945=100)		100.00		100.00		100.00		100.00

	January	February	March	April	May	June	July	August	September	Total
Passengers carried (undup.) total revenue and non-revenue	661,480	667,376	828,276	953,000	1,032,212	1,173,699	1,218,458	1,367,345		
Passenger miles flown (total revenue and non-revenue)	336,897,337	337,356,042	413,367,422	469,093,606	521,643,616	573,185,511	582,226,933	638,310,579		

[a] Express and freight ton-miles combined under express prior to July, 1945.

NOTE.—Effective January 1, 1946, all revenue traffic statistics are reported to the CAB on the basis of direct airport-to-airport distances. For purposes of comparability, those traffic statistics reported prior to that date on the basis of course-flown distances have been converted to reflect direct airport-to-airport distances.

CAA and CAB Releases

Copies of CAA releases may be obtained from the CAA Office of Aviation Information. CAB releases are obtainable from the Public Information Section of the Board. Both offices are located in the Department of Commerce Building, Washington 25, D. C.

Administration

Model City Airport Act Approved by State Aviation Officials. (Oct. 4)

CAA Opens 46 New District Offices to Handle Airport Plan. (Oct. 8)

Broadcast Stations to Carry Experimental Weather News. (Oct. 8)

Municipalities Urged to Submit Early Airport Project Requests. (Oct. 11)

Uncle Sam's Students Are Coming Back to Buy. (Oct. 23)

CAA Aids Transatlantic Pilots in "Pressure-Pattern" Flying. (Oct. 24)

CAA Solicits Written Comments for Airport Hearing. (Oct. 23)

Training State Police in Aviation Law Enforcement—speech by James V. Bernardo, Aviation Training, at Butte, Mont., Sept. 20.

Next Steps in the CAA Airport Program—speech by T. P. Wright, Administrator for Civil Aeronautics, at National Aviation Clinic, Oklahoma City, Oct. 15.

CAA Facilitation of International Air Travel—speech by H. G. Tarrington, Director, International Activities Service, at annual convention of N. Y. Aviation Council, Oct. 4.

Address of Welcome to Foreign Representatives Attending PICAO Demonstrations at Indianapolis, Oct. 10-23—T. P. Wright.

Address of Welcome at PICAO Demonstrations in Indianapolis—William A. M. Burden.

Aid to Air Navigation—address by T. P. Wright at Institute of Aeronautical Science meeting, Washington, D. C., Oct. 25.

Board

Appointment of Colonel Wallace S. Dawson as Director of the Safety Bureau of the Board. (Sept. 25)

Consolidation of routes of American Airlines, Pennsylvania-Central Airlines, Transcontinental & Western Air and United Air Lines. (Sept. 25)

Denial of acquisition of control of Mid-Continent Airlines by American Airlines. (Sept. 27)

Appointment of Louis W. Goodkind as Assistant Director, domestic, of the Economic Bureau of the Board. (Sept. 30)

Mail rate set for National Airlines. (Sept. 30)

Suspension of air transport agreements between the United States and Argentina. (Oct. 1)

Mileage flown by 20 domestic airlines for 7-month period ending July 31, 1946. (Oct. 8)

Operating revenue reports filed by 20 domestic air carriers, first 6 months of 1946. (Oct. 16)

Temporary mail rate fixed for Transcontinental & Western Air on its North Atlantic route. (Oct. 21)

ENGINEERING LIBRARY
DUKE UNIVERSITY

World Group Works On PICAO Standards For Navigation Aids

Following an intensive three-week study of the most advanced radio aids to air navigation offered by the United States, an international group of experts is at work in Montreal on a set of world standards intended to guide installations and development in this field for the years ahead.

Burden Defines Aim—Aim of the group, as defined by Assistant Secretary of Commerce William A. M. Burden in an address of welcome at CAA Experimental Station in Indianapolis, is to "assure rapid progress in air navigation techniques at a reasonable cost, and with sufficient standardization to greatly reduce the necessity of costly duplication of airborne equipment."

Mr. Burden pointed out that "the airlines of the world cannot achieve real economic stability until there is a great improvement in the safety and particularly the regularity of transport flying, and improvement in these qualities depends in turn almost entirely on progress in the development of navigational aids."

The greatest test which an "ultimate" system of navigation aids must meet, CAA Administrator T. P. Wright told the 140 foreign representatives at Indianapolis, is "how successfully, in so far as the pilot is concerned, does it convert instrument weather into contact weather?"

Wright Cites Difficulties—In working toward such a system, Mr. Wright foresaw difficulty in attaining an appropriate degree of standardization without unduly stifling development. He also cited as a problem of the Provisional International Civil Aviation Organization's Radio Technical Division the fact that "there are many installations of air navigation aids now in operation throughout the world," and changeover will be difficult, particularly in view of post-war requirements for economy.

U. S. Demonstration—In preparation for their Montreal meeting, the PICAO experts participated in an intensive program of flights and lectures at the CAA Experimental Station. The big hangar there was converted into a veritable electronics exposition, with 22 manufacturers, the Army, Navy, Coast Guard, and CAA all displaying their air navigation devices. On the field, 24 specially equipped aircraft of the Army, Navy, CAA and industry gave Indianapolis its heaviest traffic on record, as they took foreign representatives up in groups for practical demonstrations of U. S. methods.

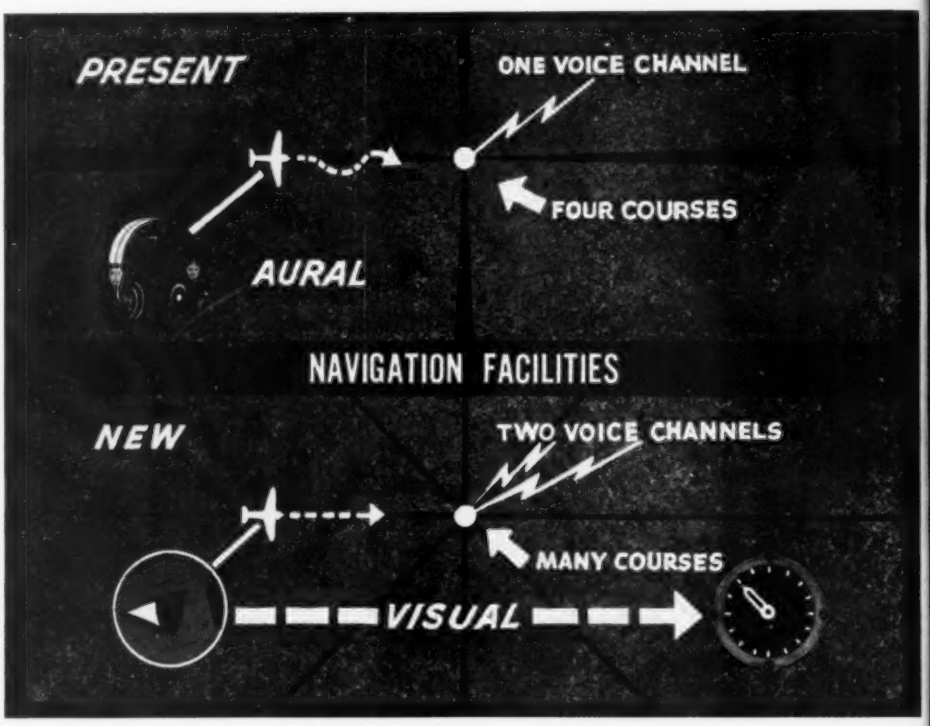
The station was alive with activity as the groups of delegates shuttled back and forth between the flying laboratories, the fixed and mobile radio and radar equipment scattered around the field, the CAA experimental control tower, the improvised lecture hall, and the display booths. A schedule carefuly planned and supervised by CAA personnel kept delegates continually on the move from 9 to 6, while an entertainment program worked out by the industry in conjunction with the State Department provided evening relaxation.

USSR Observers Present—Four observers from the USSR were present at the demonstrations, in what is believed to be that country's first participation in PICAO activities. Dr. Edward Warner, president of the PICAO Council, flew to Indianapolis for a three-day inspection of the proceedings.

Air Freight Hearings

Hearings in the air freight case on applications for scheduled freight service were started November 13 in Fort Worth, Tex. From 25 to 30 applicants are seeking Board permission for this type of service.

PICAO Technicians Shown New VHF Omni-range



Demonstrations of U. S. radio aids to PICAO technicians meeting at Indianapolis included a return trip to the east coast over the VHF omni-directional range system now installed between Chicago and New York. Changeover from the low frequency four-course range system to the very high frequency omni-range, illustrated above, is now in progress throughout the country. The new system will give the pilot static-free reception. He will be able to "see" when he is on course—the vertical needle of the cross-pointer instrument in the cockpit moves to left or right as the plane deviates from the course set on a special selector dial. The omni-range will also give the pilot many definite radio courses to follow in moving either toward or away from any station.

Airway Aids

(Continued from page 142)

which offer great hope for even safer, more frequent and better executed landings in instrument weather.

"The radar scanning screen in an airport control tower is another. Our new, model tower at Indianapolis is equipped with such a screen and is in daily service test.

"I have referred previously to the marker beacons and the radio ranges which provide 'fixes' for the pilot. Today we have under development a distance measuring device which will tell the pilot his distance from a ground station and will make possible the removal of the marker beacons along the range courses thus relieving us of the maintenance problem which the operation of these markers entails. This equipment in the plane will be light and inexpensive and will give the pilot a direct indication of his distance in miles from the beacon on the airport to which he is flying. Thus, through the use of this distance indicator in conjunction with the azimuth information provided by one omni-directional range signal, he will be able continuously to establish a 'fix' anywhere within receiving distance of the ground station.

Light Projects—"An important feature of the CAA's present and future program concerns approach lights. At Indianapolis, we have an approach path lighted by six different systems, each using a different type of light. They are so arranged that they can be turned on one after another from the control tower as the test pilot makes his observations in flight. Approach lights are an important supplementary aid to the instrument landing system. Try-outs on a service test basis at two locations (Chicago and Newark) using three separate systems are planned this winter.

"In another project, we are studying individual lights of miscellaneous kinds and uses. One of these is a 30,000,000 candlepower light which emits flashes very briefly and with such intensity that even in daylight and at long distance a pilot is guided to an airport. Another is a neon tube showing red on the inside and green on the outside to mark the boundary of an airport. Another system aims at an improvement over previous methods of marking the boundary of runways; and still another is an extension light for marking runway boundaries in deep snow.

"We plan, then, on the use of VHF omni-directional ranges supplemented by the distance indicator for comparatively short flights on and off the airways; high-powered low frequency omni-directional ranges for long great-circle high-altitude flights; and CAA instrument landing system supplemented by GCA-radar at large airport terminals; these we will supplement with other aids as they are developed and proved to be suitable. Search radar is planned for important traffic control towers."

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